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# EVALUATION OF SYNERGISTS FOR PYRETHRUM AND ALLETHRIN AGAINST THE BODY LOUSE[1]

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During the last 17 years many compounds have been evaluated as synergists for pyrethrum and allethrin against the body louse (*Pediculus humanus humanus* L.) at the Orlando, Fla., laboratory. The information accumulated has been published from time to time. In 1944 Bushland *et al*. (3) showed IN-930 (*N*-isobutylundecylenamide) to be an effective pyrethrum synergist. In 1949 Carson and Eddy (4) reported results with more than 400 compounds as synergists with pyrethrum. The present paper gives the results with compounds that have been tested with pyrethrum since then. Tests with some of them as synergists for allethrin have already been reported (Eddy *et al*. 8), and the effectiveness of others in combination with allethrin is given herein. Screening tests indicating the general range of effectiveness of some of the compounds have been reported by King (9), Chen and Barthel (5), Barthel and Alexander (1), and Barthel and Gertler (2).

All the synergists were first evaluated in combination with pyrethrum as cloth impregnants (beaker tests), and the better ones were tested with pyrethrum and/or allethrin as powders off the host (patch tests) and then as powders on human subjects (sleeve tests). Sulfoxide was used as the standard synergist in all the tests, because it is highly effective with both pyrethrum and allethrin. A ratio of 1 part of pyrethrins or allethrin to 10 parts of synergist was always used. The lice used in the beaker and patch tests were from a normal laboratory colony maintained on domestic rabbits, as described by Culpepper (6, 7). Those used in the sleeve tests were from a colony highly resistant to DDT, which was started with lice obtained from Korea in 1951. This colony was also reared on rabbits.

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[1] Most of the compounds were synthesized by chemists in the Division's Beltsville, Md. laboratory. G. S. Burden and D. L. Van Natta of the Orlando, Fla., laboratory assisted in the tests and M. D. Couch, P. Mason, S. Pratt, and R. Bonner reared the insects.

## Beaker Tests

Acetone solutions of the synergists and pyrethrum were applied by pipette to circular pieces of woolen cloth 1 1/2 inches in diameter, suspended on pins. Enough solution was used to saturate the cloths thoroughly without dripping--0.7 ml. for a light-weight cloth used in the early experiments and 1 ml. for a heavy fabric used later. The treated cloths were allowed to dry on the pins for about an hour, and then placed in 50-ml. beakers with 20 young adult lice. The exposure period was 24 hours in a room maintained at 27° C. and approximately 70 percent relative humidity.

Most synergists were first tested at a concentration of 0.05 percent in combination with 0.005 percent of pyrethrins, but occasionally higher concentrations were used. The synergists and pyrethrins were also tested individually at the same concentrations to provide a measure of their individual effectiveness. In the early experiments only one test was run, but later three replicates were made.

The treated cloths that caused at least 75 percent mortality (including moribund as well as dead lice) were held at room temperature and retested at various intervals. Materials that caused 90 percent mortality in the initial test were usually further evaluated at lower concentrations to determine the minimum effective concentration.

Of the 796 compounds tested, 293 caused at least 75 percent mortality, and 192 gave 100 percent mortality when used in combination with pyrethrins at 0.005 percent. The effective synergists and their identifying ENT numbers are listed on pages 5 - 11 and the ineffective compounds on pages 12-22. The following compounds caused at least 75 percent mortality alone; consequently their effectiveness as synergists was not clearly indicated:

1000
16809
20227
20309
20383
20384
20411
20461
20462
20483
20588
20613
20717
20870
21195
25456
31304

The results with the 293 effective compounds at a range of concentrations are given in table 1. In combination with pyrethrins at 0.0025 percent 159 compounds were at least as good as the standard, sulfoxide, and with 0.001 percent of pyrethrins 29 caused complete mortality. Tests with pyrethrins alone at 0.005 percent and with untreated checks were included in each series, but the results are omitted from the table as there was little or no mortality.

The following compounds gave 100 percent mortality in combination with pyrethrins at 0.01 percent, but were not tested at lower concentrations:

20025
20026
20056
20063
20064
20065
20143

The residual effectiveness of the compounds is shown in table 2. In these tests 107 compounds were at least as good as sulfoxide, and 67 were 100 percent effective for 7 days or more.

## Patch Tests

In the patch tests the materials were evaluated in pyrophyllite powders on patches of ribbed cotton underwear cloth 4.9 inches square (1/6 square foot). One-half gram of powder was sprinkled evenly over the cloth from a salt shaker and then rubbed in with the fingers. The treated cloths were fastened with thumbtacks to paper-covered boards 6 inches square. A wide-mouth metal jar ring 3 3/8 inches in diameter, held in position with rubber bands, was used to confine 20 adult lice on each treated cloth. The conditions of exposure were the same as in the beaker tests. Most of the experiments with pyrethrum were single tests, but some were run with three replications; the reverse was true with allethrin.

The results with 82 compounds tested with pyrethrum are given in table 3. Thirty-two materials were 100 percent effective for 0-3 days, 17 for 4-7 days, 15 for 8-12 days, and 18 for 13 or more days.

The results with 127 synergists tested with allethrin, including 20 of those used with pyrethrum, are presented in table 4. Seventy-three materials were 100 percent effective for 0-3 days, 21 for 4-7 days, and 33 for 13 or more days.

The mortality among concurrent checks on untreated cloth and on cloth treated with pyrophyllite alone did not exceed 10 percent in any of these tests, although pyrophyllite occasionally causes high mortality.

## Sleeve Tests

The most effective materials in the patch tests were evaluated in sleeves of ribbed cotton underwear cloth. Each sleeve, 1 square foot in area, was treated with 3 grams of powder evenly distributed over the inner surface. The upper and lower ends were fastened with elastic adhesive tape to the arms or legs of human subjects. After 3 days and at semiweekly intervals thereafter, 25 adult lice were placed in each sleeve and the mortality was recorded after 24 hours. The sleeves were worn continuously and reinfested at intervals as long as the treatment caused at least 75 percent mortality. Half the tests were run with two replications and the other half with four.

The results with 53 compounds tested with pyrethrum are given in table 5. Fourteen compounds were at least as good as sulfoxide, giving 100 percent mortality for at least 6 days.

The results with 34 compounds tested with allethrin, 24 of which were among those tested with pyrethrins, are given in table 6. Eighteen materials were as effective as sulfoxide at the 90-percent mortality level, but only six were 100 percent effective as long as 6 days.

## Literature Cited

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1956. Screening tests of esters of piperonyl alcohols as insecticides. U. S. Dept. Agr. ARS-33-27, 8 pp.

(3) Bushland, R. C., Eddy, G. W., and Knipling, E. F.
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(4) Carson, N. B., and Eddy, G. W.
1949. Preliminary evaluation of materials as synergists with pyrethrum against the body louse. Jour. Econ. Ent. 42: 694-9.

(5) Chen, Y. L., and Barthel, W. F.
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(7) ______________
1948. Rearing and maintaining a laboratory colony of body lice on rabbits. Amer. Jour. Trop. Med. 28: 499-504.

(8) Eddy, G. W., Cole, M. M., and Burden, G. S.
1954. Synergists with allethrin against the body louse. Jour. Econ. Ent. 47: 501-6.

(9) King, W. V., compiler.
1954. Chemicals evaluated as insecticides and repellents at Orlando, Fla. U. S. Dept. Agr. Handbook 69, 397 pp.

## Effective Synergists for Pyrethrum

| | |
|---|---|
| 813 | Piperonylamide, *N*,*N*-diethyl- |
| 1000 | Bicyclo[2.2.1]hept-5-ene-2,3-dicarboximide, *N*-pentyl- |
| 1185 | Bicyclo[2.2.1]hept-5-ene-2,3-dicarboximide, *N*-butyl- |
| 1492 | Bicyclo[2.2.1]hept-5-ene-2,3-dicarboximide, *N*-(mixed)pentyl- |
| 2970 | Bicyclo[2.2.1]hept-5-ene-2,3-dicarboximide, *N*-benzyl- |
| 4139 | Bicyclo[2.2.2]oct-5-ene-2,3-dicarboximide, *N*-allyl-1-isopropyl-4-methyl- |
| 5585 | *m*-Dioxane, 4,4-diethyl-2-(*p*-methoxyphenyl)- |
| 5586 | *m*-Dioxane, 5-ethyl-2-(*p*-methoxyphenyl)-4-propyl- |
| 5778 | *m*-Dioxane, 5,5-dimethyl-2-(*p*-methoxyphenyl)- |
| 5933 | Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, phenethyl ester |
| 7408 | Bicyclo[2.2.1]hept-5-ene-2,3-dicarboximide, *N*-isobutyl- |
| 8205 | Bicyclo[2.2.1]hept-5-ene-2,3-dicarboximide, *N*-octyl- |
| 8561 | Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 3-methyl-, 3-methylbicyclo[2.2.1]hept-5-en-2-ylmethyl ester |
| 9473 | Bicyclo[2.2.1]hept-5-ene-2,3-dicarboximide, *N*-allyl- |
| 9474 | Bicyclo[2.2.1]hept-5-ene-2,3-dicarboximide, *N*-heptyl- |
| 10502 | Malonic acid, piperonyl-, diethyl ester |
| 16809 | Bicyclo[2.2.1]hept-5-ene-2,3-dicarboximide, *N*-2-ethylbutyl- |
| 19004 | Chrysanthemumic acid, 2-(2-butoxyethoxy)ethyl ester |
| 19465 | Chrysanthemumic acid, thiol-, phenyl ester |
| 20003 | Chrysanthemumic acid, 1-(3,4-methylenedioxyphenyl)-3-buten-1-yl ester |
| 20025 | Propionic acid, *o*-cyclohexylphenyl ester |
| 20026 | Propionic acid, *p*-(*alpha*,*alpha*-dimethylbenzyl)-phenyl ester |
| 20056 | Propionic acid, *p*-cyclohexylphenyl ester |
| 20063 | Propionic acid, 2-*tert*-butyl-6-isopropylphenyl ester |
| 20064 | Propionic acid, 4-*tert*-butyl-*o*-tolyl ester |
| 20065 | Propionic acid, 2,4-di-*tert*-butyl-6-isopropylphenyl ester |
| 20083 | Propionic acid, 1-(3,4-methylenedioxyphenyl)-3-buten-1-yl ester |
| 20084 | Piperonyl alcohol, *alpha*-allyl-, benzoate |
| 20089 | Piperonyl alcohol, *alpha*-propyl-, acetate |
| 20090 | Propionic acid, *alpha*-propylpiperonyl ester |
| 20091 | Chrysanthemumic acid, *alpha*-propylpiperonyl ester |
| 20093 | Piperonyl alcohol, *alpha*-methyl-, acetate |
| 20110 | Chrysanthemumic acid, *alpha*-methylpiperonyl ester |
| 20120 | Mandelic acid, 3,4-methylenedioxy-, propyl ester |
| 20121 | Mandelic acid, 3,4-methylenedioxy-, isopropyl ester |
| 20135 | Pivalic acid, *alpha*-allylpiperonyl ester |
| 20136 | Acetic acid, phenyl-, *alpha*-allylpiperonyl ester |
| 20139 | Caproic acid, *alpha*-allylpiperonyl ester |
| 20140 | Toluene, *alpha*-allyl-3,4-methylenedioxy-*alpha*-propoxy- |
| 20141 | Toluene, *alpha*-allyl-*alpha*-allyloxy-3,4-methylenedioxy- |
| 20142 | 2-Furoic acid, *alpha*-allylpiperonyl ester |
| 20143 | Chrysanthemumic acid, *p*-methoxybenzyl ester |
| 20182 | 1,3-Dioxolane, 2-(3,4-methylenedioxyphenyl)-4-methyl- |
| 20184 | *m*-Dioxane, 5-ethyl-2-(3,4-methylenedioxyphenyl)-4-propyl- |

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|---|---|
| 20185 | *m*-Dioxane, 2-(3,4-methylenedioxyphenyl)- |
| 20227 | 1,3-Dioxolane, 2-(3,4-methylenedioxyphenyl)-4,5-dimethyl- |
| 20243 | 2-Butanol, 4-(3,4-methylenedioxyphenyl)-, acetate |
| 20244 | Chrysanthemumic acid, 4-(3,4-methylenedioxyphenyl)-*sec* butyl ester |
| 20246 | Chrysanthemumic acid, 3,4-methylenedioxybenzhydryl ester |
| 20247 | Benzhydrol, 3,4-methylenedioxy-, acetate |
| 20272 | Chrysanthemumic acid, *alpha*-ethylpiperonyl ester |
| 20275 | Piperonyl alcohol, *alpha*-ethyl-, acetate |
| 20292 | *m*-Dioxane, 4-methyl-2-(3,4-methylenedioxyphenyl)- |
| 20293 | Piperonyl alcohol, *alpha*-*tert*-butyl- |
| 20294 | Chrysanthemumic acid, *alpha*-methyl-*p*-methoxybenzyl ester |
| 20309 | Chrysanthemumic acid, *alpha*-*tert*-butylpiperonyl ester |
| 20313 | *m*-Dioxane, 5-butyl-5-ethyl-2-(3,4-methylenedioxyphenyl)- |
| 20318 | Cinnamic acid, *alpha*-cyano-3,4-methylenedioxy-, ethyl ester |
| 20332 | Fencholic acid, 1-(3,4-methylenedioxyphenyl)-3-buten-1-yl ester |
| 20336 | Chrysanthemumic acid, 2-methylcyclohexyl ester |
| 20337 | Chrysanthemumic acid, *alpha*-isopropylpiperonyl ester |
| 20338 | Piperonyl alcohol, *alpha*-isopropyl- |
| 20339 | Piperonyl alcohol, *alpha*-isopropyl-, acetate |
| 20353 | Chrysanthemumic acid, 4-methylcyclohexyl ester |
| 20354 | Chrysanthemumic acid, 2-isopropylcyclohexyl ester |
| 20355 | Chrysanthemumic acid, 4-isopropylcyclohexyl ester |
| 20357 | Senecioic acid, *alpha*-allylpiperonyl ester |
| 20358 | Propionic acid, *alpha*-*tert*-butylpiperonyl ester |
| 20365 | Piperidine, 1-(*p*-ethoxybenxoyl)- |
| 20381 | Piperonyl alcohol, *alpha*-(2-methyl-2-propenyl)- |
| 20382 | Piperonyl alcohol, *alpha*-butyl- |
| 20383 | Piperonyl alcohol, *alpha*-(1,1-dimethylpropyl)- |
| 20384 | Piperonyl alcohol, *alpha*-pentyl- |
| 20386 | *m*-Dioxane, 4,6-dimethyl-2-(3,4-methylenedioxyphenyl)- |
| 20388 | *m*-Dioxane, 2-(*p*-methoxyphenyl)-4,6-dimethyl- |
| 20391 | Piperonyl alcohol, *alpha*-butyl-, acetate |
| 20392 | Propionic acid, *alpha*-butylpiperonyl ester |
| 20393 | Piperonyl alcohol, *alpha*-pentyl-, acetate |
| 20394 | Propionic acid, *alpha*-pentylpiperonyl ester |
| 20395 | Piperonyl alcohol, *alpha*-(2-methyl-2-propenyl)-, acetate |
| 20396 | Propionic acid, *alpha*-(2-methyl-2-propenyl)piperonyl ester |
| 20410 | Chrysanthemumic acid, 2,3-dimethoxybenzyl ester |
| 20411 | Chrysanthemumic acid, *alpha*-*tert*-amylpiperonyl ester |
| 20412 | Chrysanthemumic acid, *alpha*-amylpiperonyl ester |
| 20413 | Chrysanthemumic acid, *alpha*-butylpiperonyl ester |
| 20414 | Chrysanthemumic acid, *alpha*-(2-methylallyl)piperonyl ester |
| 20416 | Piperonyl alcohol, *alpha*-cyclohexyl- |
| 20417 | Piperonyl alcohol, *alpha*-cyclohexyl-, acetate |
| 20421 | Chrysanthemumamide, *N*,*N*-diethyl- |
| 20425 | Chrysanthemumic acid, *alpha*-(3-phenylpropyl)piperonyl ester |
| 20426 | Chrysanthemumic acid, *alpha*-cyclohexylpiperonyl ester |
| 20429 | Fencholic acid, piperonyl ester |
| 20431 | Pivalic acid, piperonyl ester |
| 20432 | *m*-Dioxane, 5-ethyl-2-(3,4-methylenedioxyphenyl)-5-nitro- |

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| 20433 | Senecioic acid, piperonyl ester |
| 20436 | Piperonyl alcohol, *alpha*-(3-phenylpropyl)-, acetate |
| 20461 | Propionic acid, *alpha*-cyclohexylpiperonyl ester |
| 20462 | Piperonyl alcohol, *alpha*-cyclohexyl-, benzoate |
| 20463 | Piperonyl alcohol, *alpha*-*tert*-butyl-, acetate |
| 20464 | Piperonyl alcohol, *alpha*-*tert*-butyl-, formate |
| 20465 | Piperonyl alcohol, *alpha*-3-phenylpropyl-, formate |
| 20466 | Valeric acid, *beta*-oxo-*delta*-(3,4-methylenedioxyphenyl)-, ethyl ester |
| 20467 | *m*-Dioxane, 2-(4-hydroxy-3-methoxyphenyl)- |
| 20468 | *m*-Dioxane, 2-(4-hydroxy-3-methoxyphenyl)-4-methyl- |
| 20482 | Senecioic acid, *alpha*-*tert*-butylpiperonyl ester |
| 20483 | Senecioic acid, 2-cyclohexylpiperonyl ester |
| 20484 | Senecioic acid, *alpha*-(3-phenylpropyl)piperonyl ester |
| 20485 | Pivalic acid, *alpha*-*tert*-butylpiperonyl ester |
| 20489 | Cuminyl alcohol, *alpha*-allyl-, acetate |
| 20512 | Acetophenone, *alpha*-anilino-3,4-methylenedioxy-*alpha*-(3,4-methylenedioxyphenyl)- |
| 20515 | Hydrocinnamic acid, 1-(3,4-methylenedioxyphenyl)-3-buten-1-yl ester |
| 20516 | Acetic acid, phenyl-, *alpha*-*tert*-butylpiperonyl ester |
| 20517 | Acetic acid, phenyl-, piperonyl ester |
| 20542 | Acetamide, *alpha*-cyclohexoxy-*N*,*N*-dipropyl- |
| 20543 | Acetamide, *alpha*-(2-methylcyclohexoxy)-*N*,*N*-dipropyl- |
| 20561 | Piperonyl alcohol, *alpha*-benzyl-, acetate |
| 20572 | Acetamide, *alpha*-(piperonyloxy)-*N*,*N*-dipropyl- |
| 20585 | Chrysanthemumic acid, cyclohexylmethyl ester |
| 20586 | Chrysanthemumic acid, 3,4-dichlorobenzyl ester |
| 20587 | Chrysanthemumic acid, *o*-chlorobenzyl ester |
| 20588 | Chrysanthemumic acid, *p*-methyl-*alpha*-propylbenzyl ester |
| 20589 | Chrysanthemumic acid, *alpha*-benzylpiperonyl ester |
| 20590 | Chrysanthemumic acid, *alpha*-phenethylpiperonyl ester |
| 20597 | Cyclohexanecarboxamide, *N*,*N*-diethyl-1-hydroxy-, acetate |
| 20612 | Chrysanthemumic acid, *o*-methyl-*alpha*-propylbenzyl ester |
| 20613 | *m*-Dioxane, 4,4,6-trimethyl-2-(3,4-methylenedioxyphenyl)- |
| 20614 | Acetic acid, phenyl-, *alpha*-(3-phenylpropyl)piperonyl ester |
| 20615 | Acetic acid, phenyl-, *alpha*-phenethylpiperonyl ester |
| 20616 | Acetic acid, phenyl-, *alpha*-isopropylpiperonyl ester |
| 20617 | Ethanol, 2-piperonyloxy-, acetate |
| 20643 | *m*-Dioxane, 4-isopropyl-5,5-dimethyl-2-(3,4-methylenedioxyphenyl)- |
| 20644 | *m*-Dioxane, 5,5-dimethyl-2-(3,4-methylenedioxyphenyl)- |
| 20660 | Butyric acid, *gamma*-hydroxy-*alpha*-piperonyl-, *gamma*-lactone |
| 20687 | Chrysanthemumic acid, 6-propylpiperonyl ester |
| 20691 | 1,2-Propanediol, 1-(3,4-methylenedioxyphenyl)-, diacetate |
| 20702 | Ether, piperonyl 2-tetrahydrapyranyl |
| 20709 | 1,3-Dioxolane, 2,2,5-trimethyl-4-(3,4-methylenedioxyphenyl)- |
| 20710 | Piperonyl alcohol, 6-propenyl-, acetate |
| 20717 | Chrysanthemumic acid, 6-propenylpiperonyl ester |
| 20718 | Acetic acid, phenyl-, *alpha*-methylpiperonyl ester |
| 20720 | 10-Undecenoic acid, *alpha*-methylpiperonyl ester |

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| 20736 | Piperonyl alcohol, alpha-(1,1-dimethylpropyl)-, acetate |
| 20822 | Piperonylamine, N,N-dibutyl- |
| 20823 | Piperonylamine, N-butyl-N-pentyl- |
| 20838 | Piperonylamine, N-butyl-N-propyl- |
| 20848 | Cinnamamide, N,N-diethyl-3,4-methylenedioxy- |
| 20849 | Hydrocinnamamide, N,N-diethyl-3,4-methylenedioxy- |
| 20856 | Chrysanthemumic acid, 3-(3',4'-methylenedioxyphenyl)-2-propenyl ester |
| 20857 | Chrysanthemumic acid, 3-(3',4'-methylenedioxyphenyl)propyl ester |
| 20860 | 3-Buten-2-one, 4-(3,4-methylenedioxyphenyl)- |
| 20864 | Piperonylamine, N-ethyl-N-propyl- |
| 20865 | Piperonylamine, N-butyl-N-ethyl- |
| 20868 | Benzenesulfonic acid, 3,4-methylenedioxyphenyl ester |
| 20869 | Benzene, 4-[2-(2-butoxyethoxy)ethoxy]-1,2-methylenedioxy- |
| 20870 | Benzene, 4-[1-(2-butoxyethoxy)ethoxy]-1,2-methylenedioxy- |
| 20871 | Acetaldehyde, 2-(2-ethoxyethoxy)ethyl 3,4-methylenedioxyphenyl acetal |
| 20872 | Benzene, 4-{1-[2-(2-butoxyethoxy)ethoxy]ethoxy}-1,2-methylenedioxy- |
| 20873 | Pyran, tetrahydro-2-(3,4-methylenedioxyphenoxy)- |
| 20874 | Piperonyl alcohol, alpha-methyl- |
| 20875 | Piperonyl chloride, 6-propenyl- |
| 20891 | Succinic acid, piperonyl-, diethyl ester |
| 20893 | Piperonyl alcohol, alpha-(1,chloroethyl)-, acetate |
| 20894 | 1-Butene, 1-(3,4-methylenedioxyphenyl)- |
| 20908 | Chrysanthemumic acid, 1-(3,4-methylenedioxyphenyl)-3-buten-1-yl ester |
| 20911 | Succinic acid, piperonylidene-, diethyl ester |
| 20926 | Furan, tetrahydro-3-piperonylidene- |
| 20927 | Furan, tetrahydro-3-piperonyl- |
| 20933 | Succinic acid, piperonylidene-, dimethyl ester |
| 20934 | Succinic acid, piperonyl-, dimethyl ester |
| 20947 | 4-Cyclohexene-1,2-dicarboximide, N-octyl- |
| 20962 | Acetonitrile, 2-allyl-4,5-methylenedioxyphenyl- |
| 20963 | Safrole, 5-(chloromethyl)- |
| 20964 | Safrole, 5-[2-(2-butoxyethoxy)ethoxy]methyl- |
| 20988 | Piperonal, 6-propenyl- |
| 20989 | Acetonitrile, 4,5-methylenedioxyphenyl-2-propenyl- |
| 20996 | Acetic acid, (p-methylphenyl)-, piperonyl ester |
| 20997 | Benzene, 5-(2-bromopropyl)-1,2-methylenedioxy- |
| 20999 | Succinic acid, piperonylidine-, dipropyl ester |
| 21011 | Cyclohexaneacetic acid, 1-(3,4-methylenedioxy)-3-buten-1-yl ester |
| 21013 | 2-Propanol, 1-(3,4-methylenedioxyphenyl)-, acetate |
| 21019 | Chrysanthemumic acid, 1-piperonylethyl ester |
| 21020 | Chrysanthemumic acid, 2-piperonyl-1-propanyl ester |
| 21029 | Benzene, 4-{1-[2-(2-butoxyethoxy)-ethoxy]methyl}-1,2-methylenedioxy-5-propenyl- |
| 21030 | Chrysanthemumic acid, alpha-(p-methylphenyl)piperonyl ester |

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| 21031 | Succinic acid, 2-piperonyl-, 1-ethyl 4-propyl ester |
| 21032 | Succinic acid, 2-piperonyl-, 4-ethyl 1-propyl ester |
| 21033 | Succinic acid, 2-piperonyl-, 4-ethyl 1-isopropyl ester |
| 21034 | Succinic acid, 2-piperonyl-, 1-isopropyl 4-propyl ester |
| 21054 | Cyclopropanecarboxylic acid, 2-methyl-3-(3',4'-methylenedioxyphenyl)-, methyl ester |
| 21055 | Cyclopropanecarboxylic acid, 2-piperonyl-, methyl ester |
| 21056 | Acetonitrile, 3,4-methylenedioxyphenyl- |
| 21079-a | Benzene, 4-allyloxy-1,2-methylenedioxy- |
| 21128 | *m*-Dioxane, 2,2-dimethyl-5-piperonyl- |
| 21141 | Benzophenone, 4-methyl-3',4'-methylenedioxy- |
| 21172 | Chrysanthemumic acid, 3,4-methylenedioxyphenethyl ester |
| 21174 | 1,3-Dioxolane, 2-ethyl-5-methyl-4-(3,4-methylenedioxyphenyl)- |
| 21195 | Chrysanthemumic acid, 6-bromopiperonyl ester |
| 21219-a | Acetaldehyde, 2-(2-ethoxyethoxy)ethyl *alpha*-ethylpiperonyl acetal |
| 21253 | *m*-Dioxane, 2-methyl-5-piperonyl- |
| 21254 | *m*-Dioxane, 2-ethyl-5-piperonyl- |
| 21255 | *m*-Dioxane, 2-ethyl-2-methyl-5-piperonyl- |
| 21256 | Benzene, 4-[1-(2-ethylhexyloxy)ethoxy]methyl-1,2-methylenedioxy- |
| 21257 | Benzene, 4-[1-(ethoxy)ethoxy]methyl-1,2-methylenedioxy- |
| 21274 | Benzene, 4-[1-(2-chloroethoxy)ethoxy]methyl-1,2-methylenedioxy- |
| 21275 | Benzene, 4-[1-(butoxy)ethoxy]methyl-1,2-methylenedioxy- |
| 21276 | Benzene, 4-[1-(isobutoxy)ethoxy]methyl-1,2-methylenedioxy- |
| 21279-a | Acetaldehyde, 2-butoxyethyl *alpha*-ethylpiperonyl acetal |
| 21280-a | Acetaldehyde, 2-chloroethyl *alpha*-ethylpiperonyl acetal |
| 21289 | Benzene, 3-[1-(butoxy)ethoxy]methyl-1,2-dimethoxy- |
| 21290 | Benzene, 3-[1-(isobutoxy)ethoxy]methyl-1,2-dimethoxy- |
| 21346 | *m*-Dioxane, 2,2-dimethyl-4-(3',4'-methylenedioxyphenyl)-5-phenyl- |
| 21353 | *m*-Dioxane, 2-methyl-4-(3',4'-methylenedioxyphenyl)-5-phenyl- |
| 21612 | Benzene, 4-[{3-[1-(2-ethoxyethoxy)ethoxy]ethoxy}-2-methyl]propyl-1,2-methylenedioxy- |
| 21632 | Stilbene, 3,4-methylenedioxy- |
| 21688 | Benzene, 4-[1-{2-[2-(2-butoxyethoxy)ethoxy]ethoxy}ethoxy]-1,2-methylenedioxy- |
| 21689 | Benzene, 4-[1-{2-[2-(2-ethoxyethoxy)ethoxy]ethoxy}ethoxy]-1,2-methylenedioxy- |
| 21690 | Benzene, 4-{1-[2-(2-ethoxyethoxy)ethoxy]ethoxy}methyl-1,2-methylenedioxy-5-propyl- |
| 21699 | Acrylic acid, *beta*-(3,4-methylenedioxyphenyl)-*alpha*-phenyl-, ethyl ester |
| 21732 | Acrylic acid, *beta*-(3,4-methylenedioxyphenyl)-*alpha*-phenyl-, methyl ester |
| 21755 | Benzophenone, 3,4-methylenedioxy- |
| 21982 | Benzene, 4-[3-(1-isobutoxyethoxy)-2-methylpropyl]-1,2-methylenedioxy- |
| 21999 | Benzene, 4-{1-[1-(2-ethoxyethoxyethoxy)ethoxy]ethyl}-1,2-methylenedioxy- |
| 25402 | Acetophenone, 4',5'-methylenedioxy-2'-propyl- |
| 25403 | Propiophenone, 4',5'-methylenedioxy-2'-propyl- |

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| 25404 | Butyrophenone, 4',5'-methylenedioxy-2'-propyl- |
| 25456 | Ether, bis(2,3,3,3-tetrachloropropyl) |
| 30060 | Cinnamic acid, 3,4-methylenedioxy-, methyl ester |
| 30061 | Propionic acid, 3,4-methylenedioxyphenyl-, ethyl ester |
| 30100 | Benzene, 4-{3-[1-(2-ethoxyethoxy)ethoxy]ethoxy}propyl-1,2-methylenedioxy- |
| 30121 | Acrylamide, N,N-diethyl-3-(3,4-methylenedioxyphenyl)-2-phenyl- |
| 30122 | Propionic acid, 3-(3,4-methylenedioxyphenyl)-2-phenyl-, methyl ester |
| 30123 | Propionic acid, 3-(3,4-methylenedioxyphenyl)-2-phenyl-, ethyl ester |
| 30181 | Benzamide, N,N-dipropyl-p-isopropyl- |
| 30182 | Benzamide, N,N-dibutyl-p-isopropyl- |
| 30210 | Benzamide, N,N-p-triisopropyl- |
| 30289 | Acetaldehyde, isobutyl 6-propylpiperonyl acetal |
| 30290 | Acetaldehyde, butyl 2-methyl-3-(3,4-methylenedioxy)propyl acetal |
| 30336 | Chrysanthemumic acid, 2-allyl-4,5-methylenedioxyphenyl ester |
| 30337 | Pyran, tetrahydro-2-(2-allyl-4,5-methylenedioxyphenoxy)- |
| 30682 | Chrysanthemumic acid, 2-bromo-4,5-methylenedioxyphenyl ester |
| 30684 | Cyclopropane carboxylic acid, 3-(1,2-dibromo-2-methylpropyl)-2,2-dimethyl-, 6-bromopiperonyl ester |
| 30936 | Propane, 1,2-dibromo-3-(3,4-methylenedioxyphenyl)- |
| 30938 | Propane, 1,2-dibromo-1-(2-bromo-4,5-methylenedioxyphenyl)- |
| 30998 | Chrysanthemumic acid, alpha-(1-bromoethyl)-6-bromopiperonyl ester |
| 31000 | Benzene, 4-(2-bromo-1-methoxypropyl)-1,2-methylenedioxy- |
| 31001 | Benzene, 4-(2-bromo-1-ethoxypropyl)-1,2-methylenedioxy- |
| 31005 | Benzene, 4-bromo-5-(2-bromo-1-propoxypropyl)-1,2-methylenedioxy- |
| 31026 | Propionic acid, 6-bromo-alpha-(1-bromoethyl)piperonyl ester |
| 31060 | Isobutyric acid, 6-bromo-alpha-(1-bromoethyl)piperonyl ester |
| 31062 | Benzene, 4-bromo-5-(2-bromo-1-isopropoxy)propyl-1,2-methylenedioxy- |
| 31066 | Octanamide, N,N-dipropyl- |
| 31068 | Benzene, 4-bromo-5-[2-bromo-1-(2-methoxyethoxy)]propyl-1,2-methylenedioxy- |
| 31072 | Octanamide, N,N-dibutyl- |
| 31073 | Benzene, 4-bromo-5-[2-bromo-1-(2-butoxyethoxy)propyl]-1,2-methylenedioxy- |
| 31080 | Benzene, 4-bromo-5-(2-bromo-1-isobutoxypropyl)-1,2-methylenedioxy- |
| 31083 | Benzene, 4-bromo-5-(2-bromo-1-isopentoxypropyl)-1,2-methylenedioxy- |
| 31084 | Benzene, 4-bromo-5-(2-bromo-1-pentoxypropyl)-1,2-methylenedioxy- |
| 31113 | Benzene, 4-bromo-5-[2-bromo-1-(2-ethoxyethoxy)propyl]-1,2-methylenedioxy- |
| 31114 | Benzene, 4-bromo-5-(2-bromo-1-hexyloxypropyl)-1,2-methylenedioxy- |
| 31218 | Benzene, 4-(2,3-dibromopropyl)-5-methoxy-1,2-methylenedioxy- |
| 31252 | Benzene, 4-allyl-1,2-methylenedioxy-5-propoxy- |
| 31255 | Benzene, 5-bromo-1,2-methylenedioxy-4-propyl- |

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| 31256 | Benzene, 1,2-methylenedioxy-4-propoxy-5-propyl- |
| 31257 | Benzene, 4-(2,3-dibromopropyl)-5-ethoxy-1,2-methylenedioxy- |
| 31258 | Propiophenone, 3',4'-methylenedioxy- |
| 31259 | Benzene, 4-allyl-5-isopropoxy-1,2-methylenedioxy- |
| 31260 | Chrysanthemumic acid, 2-methylallyl-4,5-methylenedioxyphenyl ester |
| 31263 | Acetaldehyde, butyl *alpha*-ethylpiperonyl acetal |
| 31264 | Acetaldehyde, 2-[2-(2-butoxyethoxy)ethoxy]ethyl *alpha*-ethylpiperonyl acetal |
| 31265 | Acetaldehyde, 2-[2-(2-ethoxyethoxy)ethoxy]ethyl *alpha*-ethylpiperonyl acetal |
| 31304 | Chrysanthemumic acid, 6-chloro-*alpha*-ethylpiperonyl ester |
| 31305 | Chrysanthemumic acid, 6-chloro-*alpha*-methylpiperonyl ester |
| 31319 | Toluene, 2-bromo-*alpha*-(1-methoxy-2-propoxy)-4,5-methylenedioxy- |
| 31320 | Toluene, 2-bromo-*alpha*-(2-butoxyethoxy)-4,5-methylenedioxy- |
| 31352 | Toluene, 2-bromo-*alpha*-[2,2-dimethyl-3-(2-methylpropenyl)cyclopropylmethoxy]-4,5-methylenedioxy- |
| 31357 | 1,3-Dioxolane, 2-(2-chloro-4,5-methylenedioxyphenyl)-4-methyl- |
| 31363 | 1,3-Dioxolane, 2-(2-bromo-4,5-methylenedioxyphenyl)-4-methyl- |
| 31365 | *m*-Dioxolane, 2-(2-chloro-4,5-methylenedioxyphenyl)-4-methyl- |
| 31367 | Toluene, 2-chloro-alpha-[2,2-dimethyl-3-(2-methylpropenyl)cyclopropylmethoxy]-4,5-methylenedioxy- |
| 31370 | Piperonylic acid, 6-chloro-, 2,2-dimethyl-3-(2-methylpropenyl)cyclopropyl)methyl ester |
| 31376 | Chrysanthemumic acid, 2-(3,4-methylenedioxyphenoxy)ethyl ester |
| 31383 | 1,3-Dioxolane, 2-(2-bromo-4,5-methylenedioxyphenyl)-4,5-dimethyl- |
| 31390 | *m*-Dioxane, 2-(2-bromo-4,5-methylenedioxyphenyl)-5-ethyl-4-propyl- |
| 31393 | *m*-Dioxane, 2-(2-bromo-4,5-methylenedioxyphenyl)-5,5-dimethyl- |
| 31403 | Chrysanthemumic acid, 2-(2-chloro-4,5-methylenedioxyphenoxy)ethyl ester |
| 31421 | Butyramide, 3-methyl-*N*,*N*-dioctyl- |
| 31426 | *m*-Dioxane, 2-(2-bromo-4,5-methylenedioxyphenyl)- |
| 31475 | Butyramilide, *N*-butyl-3-methyl- |
| 31478 | Acetic acid, thiol-, 6-bromopiperonyl ester |
| 31486 | *m*-Dioxane, 2-(2-chloro-4,5-methylenedioxyphenyl)-5-ethyl-4-propyl- |
| 31501 | *alpha*-Toluenethiol, 2-chloro-4,5-methylenedioxy- |
| 31506 | Chrysanthemumic acid, thiol-, 6-chloropiperonyl ester |
| 31535 | Benzene, 4-bromo-5-{2-bromo-1-[2-(2-butoxyethoxy)ethoxy]propyl}-1,2-methylenedioxy- |
| 31539 | Benzene, 4-bromo-2-{2-bromo-1-[2-(2-methoxyethoxy)ethoxy]propyl}-1,2-methylenedioxy- |
| 31622 | Benzene, 1,2-methylenedioxy-4-nitro-5-propyl- |
| 31626 | Benzene sulfonanilide, *N*-methyl-4',5'-methylenedioxy-2'-propyl- |
| 31630 | Butyric acid, 3-piperonyl-, ethyl ester |
| 31661 | *m*-Dioxane, 2-(2-chloro-4,5-methylenedioxyphenyl)-4,4,6-trimethyl- |
| 31664 | Acetaldehyde, 2-(2-ethoxyethoxy)ethyl 1-(piperonyl)ethyl acetal |
| 31665 | Chrysanthemumamide, *N*-methyl-*N*-(4,5-methylenedioxy-2-propylphenyl)- |
| 31917 | *m*-Dioxane, 2-(3,4-methylenedioxyphenyl)-4,5,5-trimethyl- |

## Compounds Ineffective as Synergists for Pyrethrum

Acetaldehyde, *alpha*-(1-bromoethyl)-6-bromopiperonyl 2-(2-ethoxyethoxy)-ethyl acetal (30999)
Acetaldehyde, 2-(2-butoxyethoxy)ethyl butyl acetal (30277)
Acetaldehyde, 2-(2-butoxyethoxy)ethyl 2-(2-ethoxyethoxy)ethyl acetal (30276)
Acetaldehyde, 2-(2-butoxyethoxy)ethyl isobutyl acetal (30278)
Acetaldehyde, butyl 2-chloroethyl acetal (21920)
Acetaldehyde, butyl heptyl acetal (30280)
Acetaldehyde, butyl *p*-methoxybenzyl acetal (30286)
Acetaldehyde, butyl 3-methoxybutyl acetal (30274)
Acetaldehyde, butyl 1-methylheptyl acetal (30283)
Acetaldehyde, 2-(2-ethoxyethoxy)ethyl heptyl acetal (30279)
Acetaldehyde, 2-(2-ethoxyethoxy)ethyl *p*-methoxybenzyl acetal (30285)
Acetaldehyde, 2-(2-ethoxyethoxy)ethyl 3-methoxybutyl acetal (30273)
Acetaldehyde, 2-(2-ethoxyethoxy)ethyl 1-methylheptyl acetal (30282)
Acetaldehyde, 2-(2-ethoxyethoxy)ethyl *p*-(3-oxobutyl)phenyl acetal (31905)
Acetaldehyde, ethyl *p*-(3-oxobutyl)phenyl acetal (31910)
Acetaldehyde, ethyl phenyl acetal (21892)
Acetaldehyde, isobutyl heptyl acetal (30281)
Acetaldehyde, isobutyl *p*-methoxybenzyl acetal (30287)
Acetaldehyde, isobutyl 3-methoxybutyl acetal (30275)
Acetaldehyde, isobutyl *m*-methylbenzyl acetal (30288)
Acetaldehyde, isobutyl 1-methylheptyl acetal (30284)
Acetaldehyde, isobutyl phenyl acetal (21908)
Acetaldehyde, phenyl-, diethyl acetal (30257-a)
Acetamide, *N*-(3,4-dimethoxyphenethyl)- (31511)
Acetamide, 2-[2-(2-ethoxyethoxy)ethoxy]-*N*-isobutyl- (21879)
Acetamide, 2-(2-ethoxyethoxy)-*N*-isobutyl- (21864)
Acetamide, 2-phenyl-*N*-(2-propyl-4,5-methylenedioxyphenyl)- (31624)
Acetic acid, chloro-, 6-bromo-*alpha*-(1-bromoethyl)piperonyl ester (31061)
Acetic acid, chloro-, 2,2-dimethyl-3-(2-methylpropenyl)cyclopropanemethyl ester (31387)
Acetic acid, chloro-, piperonyl ester (31011)
Acetic acid, (3,4-methylenedioxyphenyl)-, methyl ester (30388)
Acetic acid, trichloro-, 6-bromo-*alpha*-(1-bromoethyl)piperonyl ester (31211)
Acetic acid, trichloro-, *alpha*-ethylbenzyl ester (31254)
Acetophenone, 3',4'-dimethoxy- (11163-a)
Acetophenone, 3,4-methylenedioxy- (30572)
Acrylamide, *N*,*N*-diethyl-3-*p*-methoxyphenyl-2-phenyl- (30233)
Acrylic acid, 3-(*p*-methoxyphenyl)-2-phenyl-, ethyl ester (30081)
Acrylic acid, 3-(*o*-methoxyphenyl)-2-phenyl-, methyl ester (30082)
Acrylic acid, 3-(*p*-methoxyphenyl)-2-phenyl-, methyl ester (30080)
*Aesculus hippocastanum* bark, ethyl ether extractive (21379)

*Aframomum melequeta*, ethyl ether extractive (21378)
*Alkanna tinctoria* root, ethyl ether extractive (21320)
*Anethum graveolens* seed, ethyl ether extractive (21319)
Aniline, *N*,*N*-dimethyl-*p*-(3-oxobutyl)- (31845)
Aniline, 4,5-methylenedioxy-2-propyl- (31623)
Aniline, *N*-1-piperonylethyl- (31691)
*o*-Anisaldehyde, diethyl acetal (30295-a)
*p*-Anisic acid, 6-bromo-*alpha*-(1-bromoethyl)piperonyl ester (31041)
*p*-Anisic acid, 2,2-dimethyl-3-(2-methylpropenyl)cyclopropanemethyl ester (31389)
*p*-Anisic acid, piperonyl ester (31013)
*Apium graveolens* seed, ethyl ether extractive (21318)
Barbituric acid, 5-piperonyl- (21017)
Barbituric acid, 5-piperonyl-2-thio- (21018)
Benzaldehyde, *o*--(allyloxy)-, diethyl acetal (30296-a)
Benzaldehyde, *p*-isopropyl-, diethyl acetal (30256-a)
Benzaldehyde, *o*-(methylallyloxy)-, diethyl acetal (30338)
Benzamide, *N*-butyl-*p*-isopropyl- (30335)
Benzamide, *N*-*sec*-butyl-*p*-isopropyl- (30331)
Benzamide, *N*,*N*-di-(2-ethylhexyl)- (21781)
Benzamide, *N*,*p*-diisopropyl- (30259)
Benzamide, *N*,*N*-dimethyl-*p*-isopropyl- (30180)
Benzamide, *N*,*N*-dipropyl- (21780)
Benzamide, *N*-ethyl-*p*-isopropyl- (30223)
Benzamide, *p*-isopropyl-*N*-methyl- (30219)
Benzamide, *p*-isopropyl-*N*-pentyl- (30438)
Benzene, 1-allyl-2-allyloxy- (20992)
Benzene, 1-allyl-2-butoxy-(20991)
Benzene, 1-allyl-2-propoxy- (20987)
Benzene, 4-bromo-5-(1,2-epoxypropyl)-1,2-methylenedioxy- (31689)
Benzene, 5-bromo-1,2-methylenedioxy-4-(2,3-dibromopropoxy)- (31214)
Benzene, 4-[1-(butoxy)ethoxyethoxy]methyl-1,2-methylenedioxy- (21934)
Benzene, 3-[1-(2-chloroethoxy)ethoxy]methyl-1,2-dimethoxy- (21291)
Benzene, 4-[1-(2-chloroethoxy)ethoxy]methyl-1,2-dimethoxy- (21503)
Benzene, 1,2-dibromo-4,5-methylenedioxy- (20986)
Benzene, 1-(1,2-epoxypropyl)-3,4-methylenedioxy- (31690)
Benzene, 4-{1-[2-(2-ethoxyethoxy)ethoxy]ethoxy}methyl-1,2-methylenedioxy- (21576)
Benzene, 4-{1-[2-(2-ethoxyethoxy)ethoxy]ethoxy}methyl-1,2-methylenedioxy-5-propenyl- (21619)
Benzene, 3-[1-(ethoxy)ethoxy]methyl-1,2-dimethoxy- (21292)
Benzene, 4-[1-(ethoxy)ethoxy]methyl-1,2-dimethoxy- (21502)
Benzene, 3-[1-(2-ethylhexyloxy)ethoxy]methyl-1,2-dimethoxy- (21293)
Benzene, 4-[1-(2-ethylhexyloxy)ethoxy]methyl-1,2-dimethoxy- (21501)
Benzene, 1,2-methylenedioxy-4-[2-(octylsulfonyl)propyl]- (18323)
Benzene, 4-propyl-1,2-methylenedioxy- (3435-a)
Benzene, 1,2,4-trimethoxy- (20797)
Benzenesulfonanilide, 3,4-methylenedioxy-6-propyl- (31621)
Benzenesulfonic acid, piperonyl ester (20437)

Benzoic acid, 2-allyloxy-3-ethoxy-, ethyl ester (21334)
Benzoic acid, *p*-chloro-, 6-bromo-*alpha*-(1-bromoethyl)piperonyl ester (31040)
Benzoic acid, *o*-chloro-, *alpha*-(1-bromoethyl)-6-bromopiperonyl ester (31042)
Benzoic acid, *o*-chloro-, 2,2-dimethyl-3-(2-methylpropenyl)cyclopropanemethyl ester (31392)
Benzoic acid, *o*-chloro-, piperonyl ester (20427)
Benzoic acid, *p*-chloro-, piperonyl ester (20428)
Benzoic acid, *o*-ethoxy-, piperonyl ester (20434)
Benzoic acid, O-(2-hydroxy-4,4-dimethyl-6-oxo-1-cyclohexen-1-yl)-, lactone (30144)
Benzoic acid, piperonylidene hydrazide (16479)
Benzoic acid, 3,4,5-trimethoxy-, 1-(3,4-methylenedioxyphenyl)-3-buten-1-yl ester (20435)
Benzoic acid, 3,4,5-trimethoxy-, piperonyl ester (20385)
Benzophenone, 2,2'-dihydroxy-4-methoxy- (25363)
2H-Benzotriazole, 2-(2'-hydroxy-3',5'-dimethylphenyl)- (25461)
Benzyl alcohol, 1,2-dibromo-4,5-methylenedioxy- (21014)
Benzyl alcohol, 2,4-dichloro-, formate (20557)
Benzylamine, 2,3-dimethoxy-*N*-ethyl- (20867)
Bicyclo[2.2.1]hept-5-ene-2-carbonitrile (5928-b)
Bicyclo[2.2.1]hept-5-ene-2-carboxaldehyde (10023)
Bicyclo[2.2.1]hept-5-ene-2-carboxaldehyde, 2-ethyl-3-propyl- (8275)
Bicyclo[2.2.1]hept-5-ene-2-carboxaldehyde, 3-methyl-, dibutyl acetal (7099)
Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 3-(*alpha*-acetylisovaleryl)-, methyl ester (8441)
Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, cyclohexyl ester (5934)
Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, ethyl ester (5930)
Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 2-furfuryl ester (5932)
Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, methyl ester (5929)
Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, propyl ester (5931)
Bicyclo[2.2.1]hept-5-ene-2,3-dicarboximide, *N*-(2-cyanoethyl)- (9475)
Bicyclo[2.2.1]hept-5-ene-2,3-dicarboximide, *N*-cyclohexyl- (2969-d)
Bicyclo[2.2.1]hept-5-ene-2,3-dicarboximide, *N*-dodecyl- (8185)
Bicyclo[2.2.1]hept-5-ene-2,3-dicarboximide, *N*-ethyl- (9472)
Bicyclo[2.2.1]hept-5-ene-2,3-dicarboximide, *N*-(2-hydroxyethyl)-, acetate (7476)
Bicyclo[2.2.1]hept-5-ene-2,3-dicarboximide, *N*-(2-hydroxypropyl)-, acetate (13001)
Bicyclo[2.2.1]hept-5-ene-2,3-dicarboximide, *N*-isopropyl- (7436)
Bicyclo[2.2.1]hept-5-ene-2,3-dicarboxylic acid, bis(2-ethoxyethyl) ester (8985)
Bicyclo[2.2.1]hept-5-ene-2,3-dicarboxylic acid, dibenzyl ester (9466)
Bicyclo[2.2.1]hept-5-ene-2,3-dicarboxylic acid, diethyl ester (4132)
Bicyclo[2.2.1]hept-5-ene-2,3-dicarboxylic acid, *trans*-, diethyl ester (8990)
Bicyclo[2.2.1]hept-5-ene-2,3-dicarboxylic acid, diisobutyl ester (8437)

Bicyclo[2.2.1]hept-5-ene-2,3-dicarboxylic acid, diisopropyl ester (4131)
Bicyclo[2.2.1]hept-5-ene-2,3-dicarboxylic acid, *trans*-, dimethyl ester (8991)
Bicyclo[2.2.1]hept-5-ene-2,3-dicarboxylic acid, dipropyl ester (8438)
Bicyclo[2.2.1]hept-5-ene-2,3-dicarboxylic acid, ethyl isopropyl ester (8444)
Bicyclo[2.2.1]hept-5-ene-2,3-dicarboxylic acid, ethyl methyl ester (8443)
Bicyclo[2.2.1]hept-5-ene-2,3-dicarboxylic acid, ethyl propyl ester (8445)
Bicyclo[2.2.1]hept-5-ene-2,3-dicarboxylic acid, isopropyl methyl ester (8442)
Bicyclo[2.2.1]hept-5-ene-2,3-dicarboxylic acid, methyl propyl ester (8439)
Bicyclo[2.2.1]hept-5-ene-2,2-dimethanol, 3-methyl- (7128)
Bicyclo[3.1.1]hept-2-ene-2-ethanol, 6,6-dimethyl- (14379)
Bicyclo[3.1.1]hept-2-ene-2-ethanol, 6,6-dimethyl-, acetate (14380)
Bicyclo[2.2.1]hept-5-ene-2-methanol (8981)
Bicyclo[2.2.1]hept-5-ene-2-methanol, benzoate (8617)
Bicyclo[2.2.1]hept-5-ene, 2-nitro-3-phenyl- (14842)
Bicyclo[2.2.1]hept-5-ene-2-ol, acetate (8988)
Bicyclo[2.2.1]hept-5-ene-2,2,3-tricarboxylic acid, diethyl methyl ester (14783)
Bicyclohexyl (1174-a)
[Bicyclohexyl]-1,1'-diol (4805)
Bicyclohexyl, dodecachloro- (16325)
Bicyclo[2.2.2]oct-5-ene-2,3-dicarboximide, *N*-butyl-1-isopropyl-4-methyl- (4140)
Bicyclo[2.2.2]oct-5-ene-2,3-dicarboximide, *N*-cyclohexyl-1-isopropyl-4-methyl- (4141)
Bicyclo[2.2.2]oct-5-ene-2,3-dicarboximide, *N*-dodecyl-1-isopropyl-4-methyl- (4142)
1,4-Butanediol, 2-piperonyl- (20913)
1,4-Butanediol, 2-piperonylidene- (20912)
2-Butanol, 4-(*p*-hydroxyphenyl)-, diacetate (32020)
2-Butanol, 4-(*p*-hydroxyphenyl)- (31843)
2-Butanone, 4-[*p*-(2-hydroxyethoxy)phenyl]-, acetate (31841)
2-Butanone, 4-(4-hydroxy-3-methoxyphenyl)- (31837)
2-Butanone, 4-(4-hydroxy-3-methoxyphenyl)-, acetate (31899)
2-Butanone, 4-(*o*-hydroxyphenyl)- (31830-a)
2-Butanone, 4-(*o*-hydroxyphenyl)-, acetate (31840)
3-Buten-1-ol, 1-(*p*-methoxyphenyl)- (20004)
3-Buten-1-ol, 1-(3,4-methylenedioxyphenyl)- (20906)
3-Buten-1-ol, 1-(3,4-methylenedioxyphenyl)-, acetate (20909)
Butyramide, *N*-butyl-3-methyl- (31416)
Butyramide, *N*-*sec*-butyl-3-methyl- (31476)
Butyramide, *N*-cyclohexyl-3-methyl- (31423)
Butyramide, *N*,*N*-dibutyl-3-methyl- (31414)
Butyramide, *N*,*N*-diethyl-3-methyl- (31410)
Butyramide, *N*,*N*-diisobutyl-3-methyl- (31419)

Butyramide, *N*,*N*-diisopropyl-3-methyl- (31412)
Butyramide, *N*-(3,4-dimethoxyphenethyl)- (31513)
Butyramide, *N*-isobutyl-3-methyl- (31415)
Butyramide, 3-methyl-*N*,*N*-dipropyl- (31411)
Butyramide, *N*,*N*,2-triethyl- (30262)
Butyramilide, 3',4'-dichloro- (31408)
Butyric acid, *p*-cyclohexylphenyl ester (18400)
Butyric acid, 2,4-dichlorobenzyl ester (20581)
Butyric acid, 3-piperonyl- (31627)
Caproic acid, 3,4-dichlorobenzyl ester (20575)
Chalcone, 4'-methoxy-3,4-methylenedioxy- (21737)
Chalcone, 3,4-methylenedioxy- (17317)
Chalcone, 4'-methyl-3,4-methylenedioxy- (3763-a)
4-Chromanone, 7-ethoxy-2-methyl- (21000)
4-Chromanone, 6-methoxy-2-methyl- (21169)
Chrysanthemumamide, *N*-(3,4-methylenedioxyphenyl)- (20708)
Chrysanthemumamide, *N*-(2-propyl-4,5-methylenedioxyphenyl)- (31625)
Chrysanthemumdicarboxylic acid, dimethyl ester (30102)
Chrysanthemumic acid, benzhydryl ester (20408)
Chrysanthemumic acid, *p*-butoxybenzyl ester (21556)
Chrysanthemumic acid, 2-butoxyethyl ester (19006)
Chrysanthemumic acid, *alpha*-*tert*-butyl-*o*-methoxybenzyl ester (20334)
Chrysanthemumic acid, cinnamyl ester (20144)
Chrysanthemumic acid, cyclohexyl ester (20352)
Chrysanthemumic acid, 1,2-dibromo-4,5-methylenedioxybenzyl ester (21022)
Chrysanthemumic acid, 1,1-dimethyl-3-oxobutyl ester (20133)
Chrysanthemumic acid, 4-[2-(1,3-dioxoamyl)]-*o*-methoxyphenyl ester (20423)
Chrysanthemumic acid, 2-(2-ethoxyethoxy)ethyl ester (19003)
Chrysanthemumic acid, 2-ethoxyethyl ester (19001)
Chrysanthemumic acid, 4-ethoxy-4-methyl-3-oxo-1-piperidino-1-cyclopenten-2-yl ester (31401)
Chrysanthemumic acid, ethyl ester (31012)
Chrysanthemumic acid, geranyl ester (20138)
Chrysanthemumic acid, *p*-isopropylbenzyl ester (20422)
Chrysanthemumic acid, *m*-methoxybenzyl ester (21173)
Chrysanthemumic acid, 2-(2-methoxyethoxy)ethyl ester (19002)
Chrysanthemumic acid, 2-methoxyethyl ester (19005)
Chrysanthemumic acid, o-methoxyphenyl ester (20944)
Chrysanthemumic acid, 4,5-methylenedioxy-2-nitrophenyl ester (30671)
Chrysanthemumic acid, 4-methylesculetyl diester (21023)
Chrysanthemumic acid, 2-naphthyl ester (19125-a)
Chrysanthemumic acid, 2-phenoxyethyl ester (19007)
Chrysanthemumic acid, phenyl ester (20333)
Chrysanthemumic acid, 2-piperonyl-1,4-butanediol diester (21021)
Chrysanthemumic acid, *p*-propoxybenzyl ester (21560)
Chrysanthemumic acid, 1,2,3,4-tetrahydro-2-naphthyl ester (20380)
Chrysanthemumic acid, thiol-, 2,4-dichlorobenzyl ester (31461)
Chrysanthemumic acid, thymyl ester (20409)

Chrysanthemumic acid, veratryl ester (20424)
Chrysanthemumic anhydride (20888)
Cinnamaldehyde, diethyl acetal (6442-b)
Cinnamic acid, 1,1-dimethyl-3-oxobutyl ester (20132)
Cinnamic acid, *p*-hydroxy-, acetate (31929)
Cinnamic acid, *p*-hydroxy-, ethyl ester, acetate (31904)
Cinnamic acid, *p*-hydroxy-, methyl ester (31901)
Cinnamic acid, *o*-methoxy-, *cis*-, 1-(3,4-methylenedioxyphenyl)-3-buten-1-yl ester (20088)
Cinnamic acid, 3,4-methylenedioxy-, allethrolonyl ester (20119)
Cinnamic acid, 1-(3,4-methylenedioxyphenyl)-3-buten-1-yl ester (20134)
Citrullus vulgaris seeds, ethyl ether extractive (21317)
*beta*-Conidendrol (18423)
*m*-Cresol, *alpha*,*alpha*,*alpha*,-trifluoro-4-nitro- (26208)
Crotonic acid, piperonyl ester (20929)
*Cucurbita pepo* seeds, ethyl ether extractive (21316)
1,1-Cyclobutanedicarboxylic acid, diethyl ester (5631-a)
Cyclohexanecarboxamide, (4 or 5)-chloro-*N*,*N*-diethyl-2-methyl- (31658)
Cyclohexanecarboxamide, (4 or 5)-chloro-2-methyl-*N*,*N*-dipropyl- (31660)
Cyclohexanecarboxylic acid, 1-hydroxy-, phenethyl ester (20077)
3-Cyclohexene-1-carboxaldehyde, diethyl acetal (30272-a)
3-Cyclohexene-1-carboxaldehyde, 1-methyl-, diethyl acetal (30297)
3-Cyclohexene-1-carboxamide, *N*,*N*-diethyl-1-methyl- (21740)
4-Cyclohexene-1,2-dicarboximide, *N*-(*p*-bromophenyl)-, *cis*- (21048)
4-Cyclohexene-1,2-dicarboximide, *N*-(*o*-chlorophenyl)-, *cis*- (21046)
4-Cyclohexene-1,2-dicarboximide, *N*-(*p*-chlorophenyl)-, *cis*- (21047)
4-Cyclohexene-1,2-dicarboximide, *N*-(2,4-dichlorophenyl)-, *cis*- (21130)
4-Cyclohexene-1,2-dicarboximide, *N*-(2,5-dichlorophenyl)-, *cis*- (21131)
4-Cyclohexene-1,2-dicarboximide, *N*-heptyl-, *cis*- (21050)
4-Cyclohexene-1,2-dicarboximide, *N*-(*o*-methoxyphenyl)-, *cis*- (21051)
4-Cyclohexene-1,2-dicarboximide, *N*-(*p*-methoxyphenyl)-, *cis*- (21129)
4-Cyclohexene-1,2-dicarboximide, *N*-(*m*-tolyl)-, *cis*- (21044)
4-Cyclohexene-1,2-dicarboximide, *N*-(*o*-tolyl)-, *cis*- (21043)
4-Cyclohexene-1,2-dicarboximide, *N*-(*p*-tolyl)-, *cis*- (21045)
Cyclohexenone, trimethylpiperonyl- (18507)
Cyclopentanecarboxylic acid, 1-hydroxy-, benzyl ester (21750)
Cyclopentanecarboxylic acid, 1-hydroxy-, isobutyl ester (21744)
Cyclopropane, 1-bromoethyl-2,2-dimethyl-3-(2-methylpropenyl)- (31459)
Cyclopropanecarboxamide, *N*,*N*-diethyl-2-piperonyl- (21621)
Cyclopropanecarboxylic acid, 3-(1,2-dibromo-2-methylpropyl)-2,2-dimethyl-, 2-bromo-4,5-methylenedioxyphenyl ester (30683)
Cyclopropanemethanol, 2,2-dimethyl-3-(2-methylpropenyl)-, acetate (31384)
Cyclopropanemethanol, 2,2-dimethyl-3-(2-methylpropenyl)-, benzoate (31386)
Cyclopropanemethanol, 2,2-dimethyl-3-(2-methylpropenyl)-, formate (31413)
2,6,8-Decatrienamide, *N*-isobutyl- (20754)
*m*-Dioxane, 5-butyl-5-ethyl-2-(4-hydroxy-3-methoxyphenyl)- (20469)
*m*-Dioxane, 5-ethyl-2-(*p*-methoxyphenyl)-5-nitro- (7116)

*m*-Dioxane, 5-ethyl-4-propyl- (5581-a)
*m*-Dioxane, 2-(*o*-methoxyphenyl)-4,6-dimethyl- (20387)
*m*-Dioxane, 2-(*p*-methoxyphenyl)-2-methyl- (13168)
*m*-Dioxane, 4-(*p*-methoxyphenyl)-5-methyl- (5533)
*m*-Dioxane, 2-(*p*-methoxyphenyl)-5-methyl-5-nitro- (7115)
*m*-Dioxane, 5-methyl-5-propyl- (32014)
*m*-Dioxane, 4,5,5-trimethyl- (32015)
1,3-Dioxolane, 2-(2-bromo-4,5-methylenedioxyphenyl)- (31366)
1,3-Dioxolane-4-butanol-, 2-(3,4-methylenedioxyphenyl)- (31890)
1,3-Dioxolane, 4-chloromethyl-2-(3,4-methylenedioxyphenyl)- (31958)
1,3-Dioxolane, 2-(2,3-dimethoxyphenyl)- (20473)
1,3-Dioxolane, 2-(4-hydroxy-3-methoxyphenyl)- (20441)
1,3-Dioxolane-4-methanol, 2-(3,4-methylanedioxyphenyl)-, acetate (31360)
1,3-Dioxolane, 2-(*o*-methoxyphenyl)-4,5-dimethyl- (20389)
1,3-Dioxolane, 2-(*p*-methoxyphenyl)-4,5-dimethyl- (20390)
1,3-Dioxolane, 2-(3,4-methylenedioxyphenyl)- (20183)
Ethanol, 2-(2-chloro-4,5-methylenedioxyphenoxy)- (31449)
Ethanol, 2-(2-chloro-4,5-methylenedioxyphenoxy)-, acetate (31399)
Ethanol, 2-(3',4'-methylenedioxyphenoxy)- (31373)
Ethanol, 3,4-methylenedioxyphenoxy-, acetate (31407)
Ether, 2,2-dimethyl-3-(2-methylpropyl)cyclopropylmethyl tetrahydropryranyl (31377)
Ether, *alpha*-ethylpiperonyl methyl (20181)
Ether, isobutyl phenyl (21570)
*Fabiana imbricata* tops, ethyl ether extractive (21380)
Formamide, *N*-(3,4-dimethoxyphenethyl)- (31516)
2-Furanacrylic acid, 1-(3,4-methylenedioxyphenyl)-3-buten-1-yl ester (20137)
Furfuryl alcohol, *alpha*-allyl- (20005)
Furfuryl alcohol, *alpha*-allyl-, acetate (20006)
2-Furoic acid, 6-bromo-*alpha*-(1-bromoethyl)piperonyl ester (31210)
Guaiacol, propionate (20067)
Heptanoic acid, *alpha*-hydroxy-*gamma*, *epsilon*,*epsilon*-trimethyl-, ethyl ester (20593)
5-Hexanoic acid, 6-(3,4-methylenedioxyphenyl)-4-oxo-, ethyl ester (30266)
1-Hexen-3-one, 5-hydroxy-5-methyl-1-(3,4-methylenedioxyphenyl)- (20892)
Hydrocinnamic acid, piperonyl ester (20514)
Isatoic anhydride (24983)
*o*-Isobutyranisidide (21884)
*p*-Isobutyranisidide (21893)
Isobutyric acid, piperonyl ester (31007)
*o*-Isobutyrophenetidide (21894)
*m*-Isobutyrotoluidide (21883)
*p*-Isobutyrotoluidide (21882)
Isovaleric acid, *alpha*-ethylbenzyl ester (31424)
Mandelic acid, *p*-isopropyl-, butyl ester (20544)

Mandelic acid, 3,4-methylenedioxy-, allyl ester (20130)
Mandelic acid, 3,4-methylenedioxy-, ethyl ester (20116)
Mandelic acid, 3,4-methylenedioxy-, methyl ester (20115)
Mandelic acid, octyl ester (20129)
Menthol, *l*-, propionate (20068)
4,7-Methanoindene, 6-allyloxy-3*a*,4,5,6,7,7*a*-hexahydro- (20186)
Morpholine, 4-(*m*-toluoyl)- (31638)
Morpholine, 4-(*p*-toluoyl)- (31639)
*Myrica cerifera* wax (21384)
1-Naphthoic acid, 6-bromo-*alpha*-(1-bromoethyl)piperonyl ester (31039)
1-Naphthoic acid, piperonyl ester (31050)
Octanamide, N-butyl- (31081)
Octanamide, *N*,*N*-diethyl- (31056)
Octanamide, *N*-isobutyl- (31082)
Octanoic acid, piperonyl ester (31008)
2-Oxazolin-5-one, 4-(*p*-methoxybenzylidene)-2-phenyl- (21975)
5-Oxazolone, 2-phenyl-4-piperonylidine- (16092)
Palmitic acid, 1-(3,4-methylenedioxyphenyl)-3-buten-1-yl ester (20359)
*Papaver somniferum* seed, ethyl ether extractive (21385)
1,4-Pentadien-3-one, 1,5-bis(3,4-methylenedioxyphenyl)- (20250)
*Petroselinum sativum* root, ethyl ether extractive (21321)
Phenol, 2-bromo-4,5-methylenedioxy-, benzoate (30692)
Phenol, 2,4-dinitro-6-phenyl-, acetate (20031)
Phenol, *m*-methoxy-, acetate (30573)
Phenol, 3,4-methylenedioxy-, acetate (21101-a)
Phenol, 4,5-methylenedioxy-2-nitro-, benzoate (30687)
Phosphonic acid, *alpha*-hydroxypiperonyl-, bis(*p*-chlorobenzyl) ester (20794)
Phosphonic acid, *alpha*-hydroxypiperonyl-, dimethyl ester (20775)
Piperazine, 1,4-dipropionyl- (30378)
Piperidine, 1-(*o*-ethoxybenzoyl)- (20364)
Piperidine, 1-(*m*-toluoyl)- (31642)
Piperidine, 1-(*o*-toluoyl)- (31641)
Piperidine, 1-(*p*-toluoyl)- (31640)
Piperitone (16053-a)
Piperonal, 6-allyl- (20907)
Piperonal, 6-chloro- (21540)
Piperonyl alcohol (5702)
Piperonyl alcohol, benzoate (20460)
Piperonyl alcohol, 6-bromo-, acetate (21184)
Piperonyl alcohol, 6-bromo-*alpha*-(1-bromoethyl)-, benzoate (31213)
Piperonyl alcohol, 6-chloro- (21561)
Piperonyl alcohol, alpha-(2,4-dimethylbenzyl)-, acetate (21610)
Piperonyl alcohol, formate (20415)
Piperonyl alcohol, *alpha*-3-phenylpropyl- (20430)
Piperonyl alcohol, *alpha*-propyl- (20085)
Piperonylamide (21779)
Piperonylamine, *N*-butyl- (20821)
Piperonylamine, *N*-butyl-*N*-isobutyl- (20866)

Piperonylamine, *N*-ethyl- (20863)
Piperonyl chloride, 6-chloro- (31369)
Piperonylic acid (5972)
Piperonylic acid, 2-(2-butoxyethoxy)ethyl ester (26237)
Piperonylic acid, methyl ester (30387)
Pivalic acid, hexyl ester (20486)
*Podophyllum peltatum* root, ethyl ether extractive (21314)
1,2-Propanediol, 3-(3,4-methylenedioxyphenyl)- (20686)
Propanol, 2'-bromo-4',5'-methylenedioxyphenyl-2-methyl-, acetate (30717)
1-Propanol, 3-(3',4'-methylenedioxyphenyl)- (20855)
2-Propanone, hexachloro- (22917)
2-Propen-1-ol, 3-(3',4'-methylenedioxyphenyl)- (20854)
Propionaldehyde, 2,2,3-trichloro-, diethyl acetal (30339)
Propionamide, *N*,*N*-diisobutyl-2-methyl- (21870)
Propionamide, *N*-(3,4-dimethoxyphenethyl)- (31512)
Propionamide, *N*-hexyl-2-methyl- (21869)
Propionamide, 2-methyl-*N*,*N*-dioctyl- (21911)
Propionamide, 2-methyl-*N*-(1-methylpentyl)- (21880)
Propionanilide, *N*-butyl-2-methyl- (21871)
Propionanilide, 3',4'-dichloro-2-methyl- (31409)
Propionanilide, *N*-2-dimethyl- (21868)
Propionanilide, 2-methyl-2'-nitro- (30642)
Propionic acid, 6-amyl-*m*-tolyl ester (20066)
Propionic acid, 2-bromo-4,5-methylenedioxyphenyl ester (30663)
Propionic acid, 6-bromopiperonyl ester (31417)
Propionic acid, 2-*tert*-butyl-*p*-tolyl ester (20061)
Propionic acid, 2,5-di-*tert*-butylhydroquinone ester (20028)
Propionic acid, 4,6-di-*tert*-butyl-*m*-tolyl ester (20027)
Propionic acid, 2,4-dichlorobenzyl ester (20578)
Propionic acid, 2,4-dichloro-1-naphthyl ester (20029)
Propionic acid, 2,4-dichlorophenyl ester (20030)
Propionic acid, 2,4'-dihydroxy-benzophenone diester (20055)
Propionic acid, 4,4'-dihydroxy-benzophenone diester (20057)
Propionic acid, 2,2-dimethyl-3-(2-methylpropenyl)cyclopropanemethyl ester (31385)
Propionic acid, *m*-ethylphenyl ester (20054)
Propionic acid, *p*-ethylphenyl ester (20059)
Propionic acid, eugenyl ester (20060)
Propionic acid, 3-(*p*-hydroxyphenyl)- (31909)
Propionic acid, *p*-isopropylphenyl ester (20062)
Propionic acid, 2-methoxy-4-(3-oxobutyl)phenyl ester (31898)
Propionic acid, 3-(*p*-methoxyphenyl)-2-phenyl-, ethyl ester (30113)
Propionic acid, 3-(*o*-methoxyphenyl)-2-phenyl-, methyl ester (30124)
Propionic acid, 3-(*p*-methoxyphenyl)-2-phenyl-, methyl ester (30101)
Propionic acid, 4,5-methylenedioxy-2-nitrophenyl ester (30669)
Propionic acid, 3-(3,4-methylenedioxyphenyl)-, methyl ester (30083)
Propionic acid, 1,5-naphthalenediol diester (20058)
Propiophenone, 4'-methoxy-3-(3,4-methylenedioxyphenyl)- (21874)

Pseudourea, 2-(6-chloropiperonyl)-2-thio- (31502)
Pseudourea, 2-(2,4-dimethylbenzyl)-2-thio- (31456)
Pseudourea, 2-(3,4-dimethylbenzyl)-2-thio- (31457)
Pyran, 2-(6-bromopiperonyl)-tetrahydro- (31396)
Pyran, 2-[2-(2-butoxyethoxy)ethoxy]-tetrahydro- (31380)
Pyran, tetrahydro-2-[2-(2-methoxyethoxy)ethoxy]- (31379)
Pyran, tetrahydro-2-(2-methoxy-1-methylethoxy)- (31397)
*o*-Safrole (30044)
Salicylaldehyde, acetate (31885)
Seneciamide, *N*,*N*-dibutyl- (31538)
Seneciamide, *N*,*N*-diisopropyl- (31537)
Seneciamide, *N*,*N*-dipropyl- (31534)
Sesame oil (582)
Sesamolin (20978)
Sesquiterpene, "cut" from turpentine (24797-x)
Silicon compound, polymeric organic type 200, 100 cstk. (4661)
Silicon compounds, polymeric organic type 500, 50 cstk. (4670)
Silicon compounds, polymeric organic type 500, 5.0 cstk. (8248)
Styrene, 3,4-methylenedioxy- (20094)
Succinic acid, 2,3-dipiperonylidene-, dimethyl ester (21258)
Succinic acid, (*alpha*-hydroxypiperonyl)-, *gamma*-lactone (20890)
Succinic acid, piperonylidene-, monoethyl ester (20889)
Succinimide, *N*-butyl- (31668)
Succinimide, *N*-*sec*-butyl- (31673)
Succinimide, *N*-ethyl- (31794)
Succinimide, *N*-hexyl- (31674)
Succinimide, *N*-isobutyl- (31670)
Succinimide, *N*-isopropyl- (31671)
Succinimide, *N*-phenethyl- (31677)
Succinonitrile, 2-(3,4-methylenedioxyphenyl)-3-phenyl- (25343)
*o*-Toluamide, *N*-benzyl- (30079)
*p*-Toluamide, *N*-benzyl- (30369)
*m*-Toluamide, *N*-butyl- (31515)
*o*-Toluamide, *N*-butyl- (30068)
*p*-Toluamide, *N*-butyl- (30355)
*m*-Toluamide, *N*-*sec*-butyl- (31517)
*o*-Toluamide, *N*-*sec*-butyl- (30090)
*p*-Toluamide, *N*-*sec*-butyl- (30416)
*m*-Toluamide, *N*-cyclohexyl- (31655)
*o*-Toluamide, *N*-cyclohexyl- (30075)
*p*-Toluamide, *N*-cyclohexyl- (30374)
*m*-Toluamide, *N*,*N*-dibutyl- (30126)
*o*-Toluamide, *N*,*N*-dibutyl- (30002)
*p*-Toluamide, *N*,*N*-dibutyl- (30146)
*m*-Toluamide, *N*,*N*-diethyl- (22542)
*m*-Toluamide, *N*,*N*-diisobutyl- (31514)
*o*-Toluamide, *N*,*N*-diisobutyl- (31652)
*m*-Toluamide, *N*,*N*-diisopropyl- (30130)
*o*-Toluamide, *N*,*N*-diisopropyl- (30000)
*p*-Toluamide, *N*,*N*-diisopropyl- (30161)

*m*-Toluamide, *N*,*N*-dimethyl- (30105)
*o*-Toluamide, *N*,*N*-dimethyl- (30033)
*p*-Toluamide, *N*,*N*-dimethyl- (30330)
*m*-Toluamide, *N*,*N*-dioctyl- (31518)
*m*-Toluamide, *N*,*N*-dipropyl- (30106)
*o*-Toluamide, *N*,*N*-dipropyl- (30025)
*p*-Toluamide, *N*,*N*-dipropyl- (30140)
*m*-Toluamide, *N*-isobutyl- (20931)
*o*-Toluamide, *N*-isobutyl- (20930)
*p*-Toluamide, *N*-isobutyl- (20946)
*m*-Toluamide, *N*-methyl- (30131)
*o*-Toluamide, *N*-methyl- (30032)
*m*-Toluamide, *N*-pentyl- (31636)
*o*-Toluamide, *N*-pentyl- (31637)
*p*-Toluamide, *N*-pentyl- (30332)
*o*-Toluanilide, 2'-chloro- (31225)
Toluene, 2-bromo-*alpha*-2-(2-butoxyethoxy)ethoxy-4,5-methylenedioxy- (31371)
Toluene, 2-bromo-*alpha*-2-(2-methoxyethoxy)ethoxy-4,5-methylenedioxy- (31372)
Toluene, 2-chloro-*alpha*-(2-methoxyethoxy)-4,5-methylenedioxy- (31368)
Toluene-*alpha*,*alpha*-diol, 2-chloro-4,5-methylenedioxy-, diacetate (31990)
Toluene-*alpha*,*alpha*-diol, 4-hydroxy-3-methoxy-, triacetate (32022)
Toluene-*alpha*,*alpha*-diol, *p*-hydroxy-, triacetate (31985)
Toluene-*alpha*,*alpha*-diol, *p*-isopropyl-, diacetate (32019)
Toluene-*alpha*,*alpha*-diol, 3,4-methylenedioxytoluene-, diacetate (32021)
Toluene, 3,4-methylenedioxy- (20481)
*alpha*-Toluenethiol, 2-bromo-4,5-methylenedioxy- (31450)
*alpha*-Toluenethiol, 2,4-dichloro- (31458)
*o*-Toluo-*o*-anisidide (31269)
*Trillium exectum* root, ethyl ether extractive (21322)
Tropic acid, *beta*-(3,4-methylenedioxyphenyl)-, ethyl ester, acetate (21888)
Tropic acid, 3-(3,4-methylenedioxyphenyl)-, methyl ester, acetate (21824)
Tropic acid, *beta*-(3,4-methylenedioxyphenyl)-, methyl ester, propionate (21889)
*Tsuga canadensis* pitch (21388)
10-Undecenoic acid, 1-(3,4-methylenedioxyphenyl)-3-buten-1-yl ester (20721)
10-Undecenoic acid, piperonyl ester (20719)
Urea, 1-(*p*-sulfamylphenyl)- (20201)
Valeric acid, *beta*-oxo-*delta*-phenyl-, ethyl ester (20470)
Veratraldehyde, diethyl acetal (30255)
Xanthic acid, ethyl-, allyl ester (31463)
Xanthic acid, ethyl-, butyl ester (19799)
Xanthic acid, ethyl-, ethyl ester (1301)
Xanthic acid, ethyl-, isopropyl ester (31464)
Xanthic acid, ethyl-, propyl ester (19798)
*p*-Xylene-*alpha*,*alpha*'-diol, 2,3-dibromo-5,6-methylenedioxy- (21035)

Table 1.--Results of beaker tests against body lice with selected compounds as synergists for pyrethrum at different concentrations. (Series 1-26 not replicated, series 27-64 in triplicate.)

| ENT No. | Percent mortality with indicated concentration of pyrethrins[1] | | | |
|---|---|---|---|---|
| | 0.005% | 0.0025% | 0.001% | 0.0005% |
| Series 1 | | | | |
| 813 | 100 (5) | 60 | 5 | -- |
| 5585 | 95 (0) | 100 | 30 | -- |
| 5586 | 90 (0) | 95 | 55 | -- |
| 5778 | 100 (0) | 95 | 0 | -- |
| 19004 | 75 (0) | 80 | 50 | -- |
| 20293 | 100 (0) | 85 | 0 | -- |
| Standard | 100 (0) | 100 | 40 | -- |
| Series 2 | | | | |
| 1000 | 100 (85) | 100 (10) | 15 (0) | -- |
| 1185 | 100 (0) | 80 | 10 | -- |
| 1492 | 100 (15) | 90 | 0 | -- |
| 2970 | 95 (0) | 70 | 0 | -- |
| 4139 | 100 (0) | 90 | 25 | -- |
| 5933 | 100 (25) | 100 | 20 | -- |
| 7408 | 100 (5) | 50 | 0 | -- |
| 8205 | 100 (0) | 60 | 10 | -- |
| 8561 | 100 (60) | 95 (0) | 10 | -- |
| 9473 | 100 (10) | 60 | 0 | -- |
| 9474 | 100 (25) | 100 | 15 | -- |
| 16809 | 100 (100) | 100 (20) | 15 (10) | -- |
| Standard | 100 (5) | 95 | 10 | -- |
| Series 3 | | | | |
| 20003 | 100 (0) | 100 | 100 | 10 |
| 20110 | 100 (50) | 100 (60) | 70 (0) | -- |
| Standard | 100 (0) | 100 | 20 | 0 |
| Series 4 | | | | |
| 20120 | 80 (0) | 10 | -- | -- |
| 20121 | 90 (20) | 10 | -- | -- |
| 20135 | 100 (0) | 100 | 90 | -- |
| 20136 | 100 (0) | 30 | -- | -- |
| 20139 | 100 (0) | 100 | 30 | -- |

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[1] Figures in parentheses indicate mortality caused by synergist alone.

Table 1.--Continued

| ENT No. | Percent mortality with indicated concentration of pyrethrins[1] | | | |
|---|---|---|---|---|
| | 0.005% | 0.0025% | 0.001% | 0.0005% |
| Series 4 (contd.) | | | | |
| 20140 | 100 (0) | 40 | -- | -- |
| 20141 | 100 (0) | 40 | -- | -- |
| 20142 | 100 (0) | 100 | 10 | -- |
| 20182 | 100 (0) | 20 | -- | -- |
| 20184 | 100 (10) | 100 | 80 | -- |
| 20185 | 80 (0) | 40 | -- | -- |
| Standard | 100 (0) | 70 | -- | -- |
| Series 5 | | | | |
| 20083 | 100 (0) | 100 | 95 | -- |
| 20084 | 100 (0) | 100 | 75 | -- |
| 20089 | 100 (10) | 100 | 100 | 75 |
| 20090 | 100 (10) | 100 | 100 | 85 |
| 20091 | 100 (0) | 100 | 95 | 100 |
| 20093 | 80 (20) | 50 | -- | -- |
| 20227 | 100 (90) | 100 | 100 | 70 |
| 20243 | 100 (20) | 100 | 60 | -- |
| 20244 | 100 (20) | 100 | 100 | 95 |
| 20246 | 100 (0) | 90 | 40 | -- |
| 20247 | 100 (0) | 70 | 55 | -- |
| Standard | 100 (0) | 100 | 55 | 25 |
| Series 6 | | | | |
| 20272 | 100 (0) | 100 | 100 | 45 |
| 20275 | 100 (5) | 95 | 50 | -- |
| Series 7 | | | | |
| 20292 | 100 (45) | 100 | 25 | -- |
| 20294 | 95 (20) | 60 | 0 | -- |
| Standard | 100 | 100 | 55 | -- |
| Series 8 | | | | |
| 20309 | 100 (100) | 100 | 100 | 100 |
| 20313 | 100 (50) | 100 | 100 | 65 |
| 20318 | 100 (10) | 10 | 5 | -- |
| Standard | 100 | 100 | 100 | 5 |

Table 1.--Continued

| ENT No. | Percent mortality with indicated concentration of pyrethrins[1] | | | |
|---|---|---|---|---|
| | 0.005% | 0.0025% | 0.001% | 0.0005% |
| Series 9 | | | | |
| 20332 | 100 (0) | 100 | 100 | 85 |
| 20336 | 80 (0) | 65 | -- | -- |
| 20337 | 100 (0) | 100 | 100 | 65 |
| 20338 | 100 (5) | 95 | 30 | -- |
| 20339 | 100 (20) | 100 | 60 | -- |
| 20357 | 100 (25) | 100 | 95 | 25 |
| 20358 | 100 (50) | 100 | 95 | 25 |
| 20365 | 85 (10) | -- | -- | -- |
| Standard | 100 | 100 | 100 | 10 |
| Series 10 | | | | |
| 20353 | 100 (5) | 20 | 10 | 0 |
| 20354 | 100 (40) | 55 (10) | 10 | 0 |
| 20355 | 80 (10) | 45 | 30 | 0 |
| 20381 | 80 (0) | 50 | 0 | -- |
| 20382 | 100 (25) | 90 (5) | 55 | 25 |
| 20383 | 100 (100) | 100 (100) | 100 (50) | 55 (15) |
| 20384 | 100 (100) | 100 (95) | 35 (50) | 0 |
| 20388 | 100 (10) | 25 | 10 | -- |
| Standard | 100 | 100 | 95 | 20 |
| Series 11 | | | | |
| 20386 | 100 (30) | 95 | 10 | -- |
| Standard | 100 | 100 | 55 | 15 |
| Series 12 | | | | |
| 20391 | 100 (15) | 100 | 95 | 40 |
| 20392 | 100 (20) | 100 | 100 | 60 |
| 20393 | 100 (25) | 100 | 90 | 70 |
| 20394 | 100 (30) | 100 | 100 | 45 |
| 20395 | 100 (0) | 100 | 30 | 20 |
| 20396 | 100 (10) | 100 | 90 | 60 |
| Standard | 100 | 100 | 50 | 35 |
| Series 13 | | | | |
| 20410 | 100 (65) | 35 (40) | 0 | 0 |
| 20411 | 100 (100) | 100 (100) | 65 (5) | 10 |
| 20412 | 100 (10) | 100 | 85 | 15 |
| 20413 | 100 (0) | 100 | 100 | 35 |
| 20414 | 100 (0) | 100 | 100 | 50 |

Table 1.--Continued

| ENT No. | Percent mortality with indicated concentration of pyrethrins[1] | | | |
|---|---|---|---|---|
| | 0.005% | 0.0025% | 0.001% | 0.0005% |
| Series 13 (contd.) | | | | |
| 20416 | 100 (5) | 100 | 15 | 5 |
| 20417 | 100 (15) | 100 | 100 | 75 |
| Standard | 100 | 80 | 5 | 5 |
| Series 14 | | | | |
| 20421 | 95 (0) | 20 | 5 | 0 |
| 20425 | 100 (0) | 100 | 75 | 10 |
| 20426 | 100 (0) | 100 | 80 | 0 |
| Standard | 100 | 100 | 90 | 10 |
| Series 15 | | | | |
| 20429 | 100 (5) | 100 | 95 | 35 |
| 20431 | 95 (0) | 75 | 30 | 0 |
| 20432 | 95 (0) | 80 | 15 | 10 |
| 20433 | 95 (0) | 85 | 5 | 0 |
| 20436 | 100 (0) | 100 | 65 | 10 |
| Standard | 100 | 95 | 60 | 5 |
| Series 16 | | | | |
| 20461 | 100 (100) | 100 (0) | 100 | 70 |
| 20462 | 100 (100) | 100 (10) | 100 | 5 |
| 20463 | 100 (0) | 100 | 95 | 10 |
| 20464 | 100 (0) | 100 | 60 | 5 |
| 20465 | 100 (0) | 100 | 35 | 0 |
| 20466 | 100 (0) | 75 | 5 | 0 |
| 20467 | 100 (0) | 0 | 10 | 5 |
| 20468 | 75 (0) | -- | -- | -- |
| Standard | 100 | 95 | 45 | 35 |
| Series 17 | | | | |
| 20482 | 100 (5) | 100 | 65 | -- |
| 20483 | 100 (100) | 100 (90) | 100 (20) | 90 |
| 20484 | 100 (15) | 100 | 70 | 45 |
| 20485 | 100 (40) | 100 (10) | 90 | 30 |
| 20489 | 100 (5) | 65 | -- | -- |
| Standard | 100 | 100 | 95 | 25 |

Table 1.--Continued

| ENT No. | Percent mortality with indicated concentration of pyrethrins1/ | | | |
|---|---|---|---|---|
| | 0.005% | 0.0025% | 0.001% | 0.0005% |
| Series 18 | | | | |
| 20512 | 100 (0) | 25 | 15 | 0 |
| 20515 | 100 (0) | 100 | 55 | 0 |
| 20516 | 100 (0) | 100 | 100 | 100 |
| 20517 | 85 (5) | 45 | 10 | 5 |
| Standard | 100 | 100 | 45 | 70 |
| Series 19 | | | | |
| 20542 | 75 (0) | 60 | 0 | 0 |
| 20543 | 100 (0) | 95 | 0 | 5 |
| Standard | 100 | 95 | 50 | 10 |
| Series 20 | | | | |
| 10502 | 100 (0) | 100 | 80 | 50 |
| 20561 | 100 (5) | 100 | 75 | 25 |
| 20572 | 100 (0) | 100 | 20 | 0 |
| 20585 | 100 (10) | 15 | 0 | 5 |
| 20586 | 100 (5) | 70 | 0 | 0 |
| 20587 | 100 (95) | 75 (20) | 0 | 0 |
| 20588 | 95 (10) | 10 | 0 | 0 |
| 20589 | 100 (5) | 90 | 45 | 10 |
| 20590 | 100 (15) | 100 | 75 | 10 |
| Standard | 100 | 100 | 45 | 0 |
| Series 21 | | | | |
| 20597 | 100 (70) | -- | -- | -- |
| Standard | 100 (5) | -- | -- | -- |
| Series 22 | | | | |
| 20612 | 85 (0) | 35 | 0 | 5 |
| 20613 | 100 (100) | 100 (65) | 100 (0) | 90 |
| 20614 | 100 (0) | 95 | 40 | 5 |
| 20615 | 100 (0) | 100 | 30 | 0 |
| 20616 | 100 (0) | 100 | 100 | 55 |
| 20617 | 75 (0) | 15 | 0 | 0 |
| Standard | 100 | 100 | 25 | 0 |

Table 1.--Continued

| ENT No. | Percent mortality with indicated concentration of pyrethrins[1] | | | |
|---|---|---|---|---|
| | 0.005% | 0.0025% | 0.001% | 0.0005% |
| Series 23 | | | | |
| 20643 | 100 (0) | 100 | 100 | 75 |
| 20644 | 100 (70) | 100 | 100 | 70 |
| 20660 | 100 (0) | 100 | 40 | 0 |
| 20687 | 100 (10) | 90 | 95 | 15 |
| 20691 | 100 (5) | 100 | 55 | 5 |
| Standard | 100 | 100 | 35 | 5 |
| Series 24 | | | | |
| 20702 | 100 (0) | 5 | 5 | -- |
| 20709 | 100 (0) | 45 | 10 | -- |
| 20710 | 100 (0) | 0 | 5 | -- |
| Standard | 100 | 45 | 0 | -- |
| Series 25 | | | | |
| 20717 | 100 (85) | 95 (5) | 20 (5) | 5 (5) |
| 20718 | 100 (0) | 100 | 15 | 0 |
| 20720 | 100 (0) | 25 (0) | -- | -- |
| 20736 | 100 (35) | 100 (0) | 100 | 25 |
| Standard | 100 | 95 | 15 | 0 |
| Series 26 | | | | |
| 20822 | 100 (10) | 10 | 5 | -- |
| 20823 | 100 (5) | 45 | 0 | -- |
| 20838 | 90 (0) | 15 | 5 | -- |
| Standard | 100 (5) | 100 | 10 | -- |
| Series 27 | | | | |
| 20848 | 100 (2) | 22 | -- | -- |
| 20849 | 85 (12) | 77 | -- | -- |
| 20856 | 100 (3) | 73 | 18 | 0 |
| 20857 | 100 (10) | 100 | 93 | 40 |
| Standard | 100 (20) | 93 | 12 | 2 |
| Series 28 | | | | |
| 20860 | 92 (20) | 47 | 12 | 7 |
| 20864 | 85 (12) | 28 | 23 | 8 |
| 20865 | 88 (15) | 28 | 37 | 13 |

Table 1.--Continued

| ENT No. | Percent mortality with indicated concentration of pyrethrins[1] | | | |
|---|---|---|---|---|
| | 0.005% | 0.0025% | 0.001% | 0.0005% |
| Series 28 (contd.) | | | | |
| 20868 | 98 (62) | 53 (0) | 8 | 0 |
| 20869 | 100 (32) | 77 | 27 | 8 |
| 20870 | 100 (100) | 100 (7) | 63 | 33 |
| 20871 | 98 (20) | 45 | 8 | 2 |
| 20872 | 100 (2) | 78 | 22 | 7 |
| 20873 | 100 (48) | 100 | 48 | 18 |
| 20874 | 100 (10) | 62 | 12 | 5 |
| 20875 | 100 (40) | 87 | 48 | 18 |
| Standard | 100 (8) | 100 | 53 | 35 |
| Series 29 | | | | |
| 20891 | 100 (10) | 100 | 97 | 23 |
| 20893 | 100 (8) | 93 | 3 | 0 |
| 20894 | 98 (2) | 63 | 5 | 0 |
| Standard | 100 (8) | 63 | 2 | 0 |
| Series 30 | | | | |
| 20908 | 92 (0) | 75 | 20 | 12 |
| 20911 | 100 (3) | 85 | 8 | 2 |
| 20926 | 100 (32) | 63 | 7 | 2 |
| 20927 | 100 (27) | 75 | 7 | 3 |
| Standard | 97 (0) | 65 | 3 | 7 |
| Series 31 | | | | |
| 20933 | 100 (3) | 90 | 12 | 3 |
| 20934 | 100 (0) | 83 | 7 | 3 |
| 20947 | 93 (2) | 20 | 2 | 0 |
| Standard | 100 (3) | 83 | 5 | 7 |
| Series 32 | | | | |
| 20962 | 100 (5) | 75 | 8 | 0 |
| 20963 | 100 (63) | 57 | 3 | 0 |
| 20964 | 100 (2) | 62 | 2 | 3 |
| Standard | 100 (2) | 65 | 12 | 0 |
| Series 33 | | | | |
| 20988 | 100 (18) | 92 | 2 | 2 |
| 20989 | 100 (28) | 100 | 100 | 67 |
| Standard | 100 (0) | 60 | 2 | 0 |

Table 1.--Continued

| ENT No. | Percent mortality with indicated concentration of pyrethrins[1] | | | |
|---|---|---|---|---|
| | 0.005% | 0.0025% | 0.001% | 0.0005% |
| **Series 34** | | | | |
| 20996 | 95 (0) | 90 | 28 | 7 |
| 20997 | 100 (3) | 100 | 62 | 12 |
| 20999 | 100 (3) | 93 | 90 | 43 |
| Standard | 100 (2) | 93 | 22 | 2 |
| **Series 35** | | | | |
| 21011 | 100 (0) | 100 | 78 | 12 |
| 21013 | 80 (0) | 40 | 13 | 7 |
| 21019 | 100 (7) | 100 | 97 | 62 |
| 21020 | 100 (5) | 98 | 85 | 38 |
| Standard | 100 (10) | 92 | 20 | 3 |
| **Series 36** | | | | |
| 21029 | 95 (2) | 33 | 0 | 2 |
| 21030 | 93 (2) | 23 | 0 | 0 |
| 21031 | 100 (5) | 27 | 0 | 0 |
| 21032 | 97 (0) | 77 | 12 | 0 |
| 21033 | 88 (0) | 8 | 0 | 2 |
| 21034 | 100 (2) | 32 | 2 | 0 |
| 21054 | 100 (68) | 98 | 60 | 3 |
| 21055 | 100 (12) | 72 | 3 | 0 |
| 21056 | 87 (10) | 0 | 0 | 0 |
| 21128 | 100 (33) | 97 | 17 | 2 |
| Standard | 100 (0) | 65 | 0 | 0 |
| **Series 37** | | | | |
| 21141 | 100 (0) | 87 | 5 | 0 |
| 21172 | 100 (2) | 98 | 10 | 2 |
| 21174 | 100 (0) | 100 | 35 | 2 |
| Standard | 100 (0) | 100 | 20 | 0 |
| **Series 38** | | | | |
| 21195 | 97 (95) | 53 (47) | 5 (5) | 5 (8) |
| 21253 | 100 (3) | 93 | 7 | 2 |
| 21254 | 98 (15) | 100 | 90 | 3 |
| 21255 | 100 (3) | 100 | 37 | 7 |
| 21256 | 100 (7) | 100 | 88 | 22 |
| 21257 | 98 (7) | 35 | 7 | 3 |

Table 1.--Continued

| ENT No. | Percent mortality with indicated concentration of pyrethrins[1] | | | |
|---|---|---|---|---|
| | 0.005% | 0.0025% | 0.001% | 0.0005% |
| Series 38 (contd.) | | | | |
| 21274 | 100 (3) | 62 | 7 | 5 |
| 21275 | 97 (32) | 100 | 78 | 12 |
| 21276 | 98 (15) | 100 | 83 | 27 |
| Standard | 100 (5) | 78 | 25 | 5 |
| Series 39 | | | | |
| 21289 | 95 (8) | 25 | 7 | 2 |
| 21290 | 92 (3) | 18 | 2 | 0 |
| Standard | 100 | 95 | 22 | 5 |
| Series 40 | | | | |
| 21346 | 100 (2) | 100 | 95 | 18 |
| 21353 | 100 (0) | 98 | 13 | 0 |
| Standard | 100 | 100 | 22 | 8 |
| Series 41 | | | | |
| 21612 | 100 (3) | 45 | 10 | 7 |
| Standard | 88 | 35 | 7 | 3 |
| Series 42 | | | | |
| 21632 | 100 (2) | 38 | 7 | 5 |
| 21688 | 100 (0) | 15 | 3 | 3 |
| 21689 | 97 (0) | 10 | 3 | 0 |
| 21690 | 100 (0) | 28 | 8 | 3 |
| 21699 | 100 (0) | 55 | 7 | 3 |
| 21732 | 100 (0) | 100 | 57 | 7 |
| Standard | 100 (0) | 65 | 22 | 0 |
| Series 43 | | | | |
| 21755 | 80 (7) | 100 | 35 | 12 |
| Standard | 87 | 85 | 25 | 5 |
| Series 44 | | | | |
| 21982 | 100 (3) | 98 | 42 | 10 |
| Standard | 83 | 18 | 7 | 10 |

Table 1.--Continued

| ENT No. | Percent mortality with indicated concentration of pyrethrins[1] | | | |
|---|---|---|---|---|
| | 0.005% | 0.0025% | 0.001% | 0.0005% |
| Series 45 | | | | |
| 21999 | 100 (7) | 100 | 43 | -- |
| Standard | 100 | 73 | 22 | -- |
| Series 46 | | | | |
| 30060 | 87 (15) | 80 | 7 | 7 |
| 30061 | 95 (8) | 75 | 13 | 5 |
| 30100 | 100 (3) | 72 | 20 | 7 |
| Standard | 100 | 100 | 42 | 12 |
| Series 47 | | | | |
| 30121 | 97 (3) | 95 | 68 | 17 |
| 30122 | 100 (10) | 90 | 87 | 23 |
| 30123 | 100 (8) | 98 | 92 | 77 |
| Standard | 100 | 93 | 37 | 8 |
| Series 48 | | | | |
| 30181 | 100 (3) | 20 | 2 | 3 |
| 30182 | 78 (0) | 47 | 2 | 7 |
| Standard | 93 | 67 | 5 | 2 |
| Series 49 | | | | |
| 30210 | 100 (0) | 68 | 2 | 8 |
| 30289 | 100 (7) | 100 | 58 | 13 |
| 30290 | 100 (53) | 100 | 100 | 65 |
| Standard | 97 | 72 | 7 | 0 |
| Series 50 | | | | |
| 21079 | 90 (8) | 30 | 8 | 0 |
| 30336 | 100 (3) | 97 | 33 | 10 |
| 30337 | 100 (7) | 100 | 47 | 7 |
| Standard | 97 | 67 | 12 | 5 |
| Series 51 | | | | |
| 30682 | 87 (0) | 23 | 5 | 0 |
| 30684 | 88 (2) | 18 | 7 | 3 |
| Standard | 93 | 90 | 17 | 3 |

Table 1.--Continued

| ENT No. | Percent mortality with indicated concentration of pyrethrins[1] 0.005% | 0.0025% | 0.001% | 0.0005% |
|---|---|---|---|---|
| Series 52 | | | | |
| 30936 | 100 (8) | 87 | 8 | 2 |
| 30938 | 88 (2) | 38 | 0 | 2 |
| 30998 | 97 (8) | 63 | 8 | 2 |
| 31000 | 100 (0) | 93 | 12 | 2 |
| 31001 | 100 (3) | 100 | 32 | 2 |
| 31005 | 100 (5) | 100 | 93 | 15 |
| 31026 | 100 (7) | 75 | 3 | 2 |
| 31060 | 97 (2) | 83 | 8 | 7 |
| 31062 | 100 (23) | 100 | 95 | 38 |
| 31066 | 78 (7) | -- | -- | -- |
| 31068 | 100 (2) | 98 | 7 | 2 |
| 31072 | 90 (0) | 37 | 5 | 0 |
| 31073 | 100 (7) | 100 | 37 | 0 |
| 31080 | 98 (3) | 100 | 80 | 23 |
| 31083 | 100 (10) | 100 | 53 | 5 |
| 31084 | 100 (3) | 93 | 58 | 8 |
| 31113 | 100 (0) | 100 | 65 | 5 |
| 31114 | 98 (3) | 93 | 47 | 5 |
| Standard | 98 | 35 | 3 | 2 |
| Series 53 | | | | |
| 21219-a | 95 (2) | 97 | 100 | 13 |
| 21279-a | 98 (5) | 97 | 92 | 15 |
| 21280-a | 97 (0) | 93 | 82 | 3 |
| 31218 | 80 (2) | 47 | 23 | 3 |
| 31252 | 100 (18) | 95 | 22 | 2 |
| 31255 | 98 (0) | 18 | 7 | 0 |
| 31256 | 97 (22) | 87 | 15 | 0 |
| 31257 | 98 (3) | 88 | 30 | 0 |
| Standard | 95 | 90 | 50 | 3 |
| Series 54 | | | | |
| 31258 | 100 (5) | 22 | 7 | 0 |
| 31259 | 100 (10) | 43 | 5 | 5 |
| 31260 | 77 (2) | 55 | 10 | 5 |
| 31263 | 97 (23) | 100 | 100 | 80 |
| 31264 | 100 (2) | 88 | 17 | 8 |
| 31265 | 98 (0) | 70 | 13 | 2 |
| 31304 | 98 (83) | 95 (67) | 72 (8) | 23 (2) |
| 31305 | 97 (2) | 93 | 68 | 5 |
| Standard | 93 | 83 | 35 | 7 |

Table 1.--Continued

| ENT No. | Percent mortality with indicated concentration of pyrethrins[1] | | | |
|---|---|---|---|---|
| | 0.005% | 0.0025% | 0.001% | 0.0005% |
| Series 55 | | | | |
| 25402 | 85 (2) | 13 | 5 | 0 |
| 25403 | 100 (3) | 82 | 18 | 0 |
| 25404 | 100 (60) | 78 | 62 | 5 |
| 31319 | 92 (2) | 8 | 2 | 2 |
| 31320 | 85 (0) | 10 | 0 | 3 |
| 31352 | 100 (2) | 62 | 7 | 0 |
| 31357 | 98 (2) | 8 | 0 | 3 |
| 31363 | 95 (0) | 3 | 0 | 2 |
| 31365 | 95 (7) | 65 | 3 | 2 |
| 31367 | 100 (5) | 92 | 13 | 2 |
| Standard | 97 | 58 | 3 | 2 |
| Series 56 | | | | |
| 31370 | 97 (0) | 73 | 15 | 7 |
| 31376 | 97 (2) | 87 | 17 | 12 |
| Standard | 95 | 88 | 20 | 10 |
| Series 57 | | | | |
| 31383 | 100 (0) | 95 | 27 | 0 |
| 31390 | 95 (10) | 82 | 28 | 8 |
| 31393 | 98 (5) | 95 | 75 | 15 |
| 31403 | 80 (0) | 62 | 13 | 8 |
| Standard | 95 | 88 | 20 | 10 |
| Series 58 | | | | |
| 25456 | 100 (100) | 97 (73) | 28 (3) | 5 (2) |
| 31421 | 78 (0) | -- | -- | -- |
| 31426 | 98 (3) | 8 | 2 | 0 |
| Standard | 97 | 72 | 12 | 2 |
| Series 59 | | | | |
| 19465 | 95 (73) | 45 | 2 | 8 |
| 31475 | 80 (13) | 7 | 3 | 3 |
| 31478 | 98 (3) | 80 | 3 | 5 |
| 31486 | 98 (2) | 100 | 53 | 2 |
| 31501 | 100 (3) | 32 | 3 | 5 |
| Standard | 98 | 68 | 2 | 8 |

Table 1.--Continued

| ENT No. | Percent mortality with indicated concentration of pyrethrins[1] | | | |
|---|---|---|---|---|
| | 0.005% | 0.0025% | 0.001% | 0.0005% |
| Series 60 | | | | |
| 31506 | 92 (52) | 32 | 2 | 0 |
| Standard | 92 | 42 | 3 | 3 |
| Series 61 | | | | |
| 31535 | 93 (5) | 77 | 10 | 8 |
| 31539 | 97 (5) | 35 | 10 | 8 |
| 31622 | 98 (5) | 73 | 3 | 3 |
| 31626 | 90 (3) | 63 | 8 | 7 |
| Standard | 93 | 67 | 12 | 3 |
| Series 62 | | | | |
| 31630 | 90 (7) | 85 | 17 | 7 |
| Standard | 85 | 50 | 13 | 3 |
| Series 63 | | | | |
| 31661 | 98 (0) | 93 | 95 | 8 |
| 31664 | 82 (2) | 37 | 3 | 2 |
| 31665 | 90 (3) | 83 | 42 | 8 |
| Standard | 87 | 50 | 13 | 3 |
| Series 64 | | | | |
| 31917 | 98 (5) | 100 | 97 | 50 |
| Standard | 90 | 78 | 20 | 3 |

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[1] Figures in parentheses indicate mortality caused by synergist alone.

Table 2.--Residual effectiveness of selected compounds as synergists for pyrethrum in beaker tests against body lice. (Pyrethrins used at 0.01% in series 2-4, at 0.005% in other series. Series 1-28 not replicated, other series in triplicate.)

| ENT No. | Percent mortality on indicated days after treatment[1] | | | | | | |
|---|---|---|---|---|---|---|---|
| | Initial | 2-4 | 7-8 | 10-14 | 16-19 | 21-23 | 26-30 |
| Series 1 | | | | | | | |
| 813 | 100 (5) | 90 | 100 | 80 | -- | -- | -- |
| 5585 | 95 (0) | 80 | 100 | 55 | -- | -- | -- |
| 5586 | 90 (0) | 80 | 100 | 75 | -- | -- | -- |
| 5778 | 100 (0) | 85 | 75 | 5 | -- | -- | -- |
| 19004 | 75 (0) | 70 | 65 | 45 | -- | -- | -- |
| 20293 | 100 (0) | 85 | 85 | 25 | -- | -- | -- |
| Standard | 100 (0) | 100 | 100 | 100 | -- | -- | -- |
| Series 2 | | | | | | | |
| 1000 | 100 (85) | 100 (5) | 85 | 55 | -- | -- | -- |
| 1185 | 100 (0) | 100 | 45 | -- | -- | -- | -- |
| 1492 | 100 (15) | 100 | 40 | -- | -- | -- | -- |
| 2970 | 95 (0) | 100 | 40 | -- | -- | -- | -- |
| 4139 | 100 (0) | 100 | 85 | 10 | -- | -- | -- |
| 5933 | 100 (25) | 95 | 0 | -- | -- | -- | -- |
| 7408 | 100 (5) | 70 | 5 | -- | -- | -- | -- |
| 8205 | 100 (0) | 85 | 45 | -- | -- | -- | -- |
| 8561 | 100 (60) | 85 (0) | 30 | -- | -- | -- | -- |
| 9473 | 100 (10) | 100 | 10 | -- | -- | -- | -- |
| 9474 | 100 (25) | 100 | 55 | -- | -- | -- | -- |
| 16809 | 100 (100) | 100 (0) | 20 | -- | -- | -- | -- |
| Standard | 100 (5) | 100 | 100 | 95 | -- | -- | -- |
| Series 3 | | | | | | | |
| 20003 | 100 (0) | 100 | 100 | 100 | 100 | 100 | 100 |
| 20025 | 100 (--) | 80 | 70 | -- | -- | -- | -- |
| 20026 | 100 (0) | 95 | 75 | -- | -- | -- | -- |
| 20056 | 100 (--) | 100 | 100 | 75 | 80 | 40 | -- |
| 20063 | 100 (--) | 65 | 20 | -- | -- | -- | -- |
| 20064 | 100 (--) | 80 | 10 | -- | -- | -- | -- |
| 20065 | 100 (--) | 100 | 50 | -- | -- | -- | -- |
| Standard | 100 (0) | 100 | 100 | 100 | 100 | 100 | 100 |
| Series 4 | | | | | | | |
| 20110 | 100 (--) | -- | 100 | 90 | 40 | -- | -- |
| Standard | 100 (--) | -- | 100 | 90 | 30 | -- | -- |

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[1] Figures in parentheses represent mortality caused by synergist alone.

Table 2.--Continued

| ENT No. | Percent mortality on indicated days after treatment[1] | | | | | | |
|---|---|---|---|---|---|---|---|
| | Initial | 2-4 | 7-8 | 10-14 | 16-19 | 21-23 | 26-30 |
| Series 5 | | | | | | | |
| 20120 | 100 (0) | 20 | -- | -- | -- | -- | -- |
| 20121 | 100 (0) | 30 | -- | -- | -- | -- | -- |
| 20135 | 100 (50) | -- | 100 | 0 | -- | -- | -- |
| 20136 | 100 (0) | -- | 80 | 10 | -- | -- | -- |
| 20139 | 100 (0) | -- | 100 | 60 | -- | -- | -- |
| 20140 | 100 (90) | 10 | -- | -- | -- | -- | -- |
| 20141 | 100 (100) | 0 | -- | -- | -- | -- | -- |
| 20142 | 100 (0) | -- | 90 | 10 | -- | -- | -- |
| 20143 | 100 (0) | -- | 30 | -- | -- | -- | -- |
| 20182 | 100 (50) | 50 | -- | -- | -- | -- | -- |
| 20184 | 100 (80) | -- | 100 | 10 | -- | -- | -- |
| 20185 | 100 (0) | 20 | -- | -- | -- | -- | -- |
| Standard | 100 (0) | -- | 40 | 0 | -- | -- | -- |
| Series 6 | | | | | | | |
| 20083 | 100 (0) | 40 | -- | -- | -- | -- | -- |
| 20084 | 100 (0) | 80 | -- | -- | -- | -- | -- |
| 20089 | 100 (10) | 10 | -- | -- | -- | -- | -- |
| 20090 | 100 (10) | 10 | -- | -- | -- | -- | -- |
| 20091 | 100 (0) | 100 | 100 | -- | 100 | -- | 100 |
| 20093 | 80 (20) | 40 | -- | -- | -- | -- | -- |
| 20227 | 100 (90) | 50 | -- | -- | -- | -- | -- |
| 20243 | 100 (20) | 20 | -- | -- | -- | -- | -- |
| 20244 | 100 (20) | 100 | 100 | -- | -- | -- | 100 |
| 20246 | 100 (0) | 80 | -- | -- | -- | -- | -- |
| 20247 | 100 (0) | 30 | -- | -- | -- | -- | -- |
| Standard | 100 (0) | 80 | -- | -- | -- | -- | -- |
| Series 7 | | | | | | | |
| 20272 | 100 (0) | -- | 100 | 90 | 40 | -- | -- |
| 20275 | 100 (5) | 25 | -- | -- | -- | -- | -- |
| Series 8 | | | | | | | |
| 20292 | 100 (45) | 10 | -- | -- | -- | -- | -- |
| 20294 | 95 (20) | 10 | -- | -- | -- | -- | -- |
| Standard | 100 | 95 | 80 | -- | -- | -- | -- |

Table 2.--Continued

| ENT No. | Percent mortality on indicated days after treatment[1] | | | | | | |
|---|---|---|---|---|---|---|---|
| | Initial | 2-4 | 7-8 | 10-14 | 16-19 | 21-23 | 26-30 |
| **Series 9** | | | | | | | |
| 20309 | 100 (100) | 100 | 100 | 100 | 100 | 45 | -- |
| 20313 | 100 (50) | 100 | 100 | 100 | 100 | 5 | -- |
| 20318 | 100 (10) | 65 | 30 | -- | -- | -- | -- |
| Standard | 100 | 100 | 100 | 100 | 55 | -- | -- |
| **Series 10** | | | | | | | |
| 20332 | 100 (0) | 100 | 90 | 15 | -- | -- | -- |
| 20336 | 80 (0) | 35 | -- | -- | -- | -- | -- |
| 20337 | 100 (0) | 100 | 90 | 25 | -- | -- | -- |
| 20338 | 100 (5) | 100 | 0 | -- | -- | -- | -- |
| 20339 | 100 (20) | 35 | -- | -- | -- | -- | -- |
| 20357 | 100 (25) | 100 | 5 | -- | -- | -- | -- |
| 20358 | 100 (50) | 90 | 0 | -- | -- | -- | -- |
| 20365 | 85 (10) | 40 | -- | -- | -- | -- | -- |
| Standard | 100 | 100 | 60 | 30 | -- | -- | -- |
| **Series 11** | | | | | | | |
| 20353 | 100 (5) | 45 | -- | -- | -- | -- | -- |
| 20354 | 100 (40) | 0 | -- | -- | -- | -- | -- |
| 20355 | 80 (10) | 15 | -- | -- | -- | -- | -- |
| 20381 | 80 (0) | 45 | -- | -- | -- | -- | -- |
| 20383 | 100 (100) | 100 (10) | 25 | -- | -- | -- | -- |
| 20384 | 100 (100) | 40 (10) | -- | -- | -- | -- | -- |
| Standard | 100 | 100 | 95 | -- | -- | -- | -- |
| **Series 12** | | | | | | | |
| 20386 | 100 (30) | 100 | 25 | -- | -- | -- | -- |
| Standard | 100 | 100 | 90 | -- | -- | -- | -- |
| **Series 13** | | | | | | | |
| 20391 | 100 (15) | 85 | 35 | -- | -- | -- | -- |
| 20392 | 100 (20) | 80 | 95 | 10 | -- | -- | -- |
| 20393 | 100 (25) | 95 | 55 | -- | -- | -- | -- |
| 20394 | 100 (30) | 95 | 90 | 30 | -- | -- | -- |
| 20395 | 100 (0) | 50 | -- | -- | -- | -- | -- |
| 20396 | 100 (10) | 75 | 30 | -- | -- | -- | -- |
| Standard | 100 | 100 | 100 | 90 | -- | -- | -- |

Table 2.--Continued

| ENT No. | Percent mortality on indicated days after treatment[1] | | | | | | |
|---|---|---|---|---|---|---|---|
| | Initial | 2-4 | 7-8 | 10-14 | 16-19 | 21-23 | 26-30 |
| Series 14 | | | | | | | |
| 20410 | 100 (65) | 100 (75) | 10 (0) | -- | -- | -- | -- |
| 20411 | 100 (100) | 100 (80) | 70 (5) | 20 | -- | -- | -- |
| 20412 | 100 (10) | 100 | 100 | 65 | -- | -- | -- |
| 20413 | 100 (0) | 100 | 100 | 80 | -- | -- | -- |
| 20414 | 100 (0) | 100 | 100 | 75 | -- | -- | -- |
| 20416 | 100 (5) | 65 | 20 | -- | -- | -- | -- |
| 20417 | 100 (15) | 100 | 90 | 25 | -- | -- | -- |
| Standard | 100 | 100 | 15 | -- | -- | -- | -- |
| Series 15 | | | | | | | |
| 20421 | 95 (0) | 0 | -- | -- | -- | -- | -- |
| 20425 | 100 (0) | 100 | 100 | 0 | -- | -- | -- |
| 20426 | 100 (0) | 100 | 100 | 5 | -- | -- | -- |
| Standard | 100 | 85 | 25 | -- | -- | -- | -- |
| Series 16 | | | | | | | |
| 20429 | 100 (5) | 100 | 50 | -- | -- | -- | -- |
| 20431 | 95 (0) | 90 | 0 | -- | -- | -- | -- |
| 20432 | 95 (0) | 100 | 25 | -- | -- | -- | -- |
| 20433 | 95 (0) | 100 | 25 | -- | -- | -- | -- |
| 20436 | 100 (0) | 100 | 95 | -- | -- | -- | -- |
| Standard | 100 | 100 | 40 | -- | -- | -- | -- |
| Series 17 | | | | | | | |
| 20461 | 100 (100) | 100 | 100 | 100 | 100 | 100 | 100 |
| 20462 | 100 (100) | 100 | 100 | 90 | 85 | 35 | -- |
| 20463 | 100 (0) | 100 | 60 | -- | -- | -- | -- |
| 20464 | 100 (0) | 100 | 95 | 45 | -- | -- | -- |
| 20465 | 100 (0) | 100 | 75 | 70 | -- | -- | -- |
| 20466 | 100 (0) | 100 | 75 | -- | -- | -- | -- |
| 20467 | 100 (0) | 35 | -- | -- | -- | -- | -- |
| 20468 | 75 (0) | -- | -- | -- | -- | -- | -- |
| Standard | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| Series 18 | | | | | | | |
| 20482 | 100 (5) | 100 | 100 | 80 | 10 | -- | -- |
| 20483 | 100 (100) | 100 (0) | 100 | 90 | 50 | -- | -- |
| 20484 | 100 (15) | 100 | 90 | 90 | 40 | -- | -- |
| 20485 | 100 (40) | 100 | 60 | -- | -- | -- | -- |
| 20489 | 100 (5) | 70 | 25 | -- | -- | -- | -- |
| Standard | 100 | 100 | 100 | 100 | 100 | -- | -- |

Table 2.--Continued

| ENT No. | Percent mortality on indicated days after treatment[1/] | | | | | | |
|---|---|---|---|---|---|---|---|
| | Initial | 2-4 | 7-8 | 10-14 | 16-19 | 21-23 | 26-30 |
| **Series 19** | | | | | | | |
| 20512 | 100 (0) | 15 | -- | -- | -- | -- | -- |
| 20515 | 100 (0) | 25 | -- | -- | -- | -- | -- |
| 20516 | 100 (0) | 100 | 100 | 20 | -- | -- | -- |
| 20517 | 85 (5) | 0 | -- | -- | -- | -- | -- |
| Standard | 100 | 100 | 75 | 0 | -- | -- | -- |
| **Series 20** | | | | | | | |
| 20542 | 75 (0) | 0 | -- | -- | -- | -- | -- |
| 20543 | 100 (0) | 0 | -- | -- | -- | -- | -- |
| Standard | 100 | 20 | -- | -- | -- | -- | -- |
| **Series 21** | | | | | | | |
| 10502-a | 100 (0) | 100 | 25 | -- | -- | -- | -- |
| 20561 | 100 (5) | 100 | 20 | -- | -- | -- | -- |
| 20572 | 100 (0) | 90 | 15 | -- | -- | -- | -- |
| 20585 | 100 (10) | 0 | -- | -- | -- | -- | -- |
| 20586 | 100 (5) | 15 | -- | -- | -- | -- | -- |
| 20587 | 100 (95) | 5 (0) | -- | -- | -- | -- | -- |
| 20588 | 95 (10) | 5 | -- | -- | -- | -- | -- |
| 20589 | 100 (5) | 95 | 20 | -- | -- | -- | -- |
| 20590 | 100 (15) | 100 | 70 | 0 | -- | -- | -- |
| Standard | 100 | 70 | 10 | -- | -- | -- | -- |
| **Series 22** | | | | | | | |
| 20597 | 100 (70) | 15 (5) | -- | -- | -- | -- | -- |
| Standard | 100 (5) | 100 | -- | -- | -- | -- | -- |
| **Series 23** | | | | | | | |
| 20612 | 85 (0) | 5 | -- | -- | -- | -- | -- |
| 20613 | 100 (100) | 70 (5) | 25 | -- | -- | -- | -- |
| 20614 | 100 (0) | 10 | -- | -- | -- | -- | -- |
| 20615 | 100 (0) | 10 | -- | -- | -- | -- | -- |
| 20616 | 100 (0) | 90 | 90 | -- | -- | -- | -- |
| 20617 | 75 (0) | 10 | -- | -- | -- | -- | -- |
| Standard | 100 | 30 | -- | -- | -- | -- | -- |

Table 2.--Continued

| ENT No. | Percent mortality on indicated days after treatment[1] | | | | | | |
|---|---|---|---|---|---|---|---|
| | Initial | 2-4 | 7-8 | 10-14 | 16-19 | 21-23 | 26-30 |
| **Series 24** | | | | | | | |
| 20643 | 100 (0) | 100 | 25 | -- | -- | -- | -- |
| 20644 | 100 (70) | 100 (15) | 55 | -- | -- | -- | -- |
| 20660 | 100 (0) | 100 | 85 | 25 | -- | -- | -- |
| 20687 | 100 (10) | 75 | 95 | 70 | -- | -- | -- |
| 20691 | 100 (5) | 100 | 45 | -- | -- | -- | -- |
| Standard | 100 | 100 | 70 | -- | -- | -- | -- |
| **Series 25** | | | | | | | |
| 20702 | 100 (0) | 100 | 95 | 55 | -- | -- | -- |
| 20709 | 100 (0) | 85 | 30 | -- | -- | -- | -- |
| 20710 | 100 (0) | 100 | 85 | 30 | -- | -- | -- |
| Standard | 100 | 100 | 100 | 60 | -- | -- | -- |
| **Series 26** | | | | | | | |
| 20717 | 100 (85) | -- | 100 (55) | 100 | -- | 95 | 100 |
| 20718 | 100 (0) | -- | 100 | 100 | -- | 100 | 100 |
| 20720 | 100 (0) | -- | 40 | -- | -- | -- | -- |
| 20736 | 100 (35) | -- | 95 | 10 | -- | -- | -- |
| Standard | 100 (0) | -- | 100 | 100 | -- | 35 | -- |
| **Series 27** | | | | | | | |
| 20822 | 100 (10) | 100 | 65 | -- | -- | -- | -- |
| 20823 | 100 (5) | 100 | 100 | 70 | 65 | -- | -- |
| 20838 | 90 (0) | 15 | -- | -- | -- | -- | -- |
| Standard | 100 (5) | 100 | 100 | 80 | 100 | -- | -- |
| **Series 28** | | | | | | | |
| 20848 | 100 (2) | 100 | 100 | 82 | 33 | -- | -- |
| 20849 | 85 (12) | 95 | 30 | -- | -- | -- | -- |
| 20856 | 100 (3) | 100 | 100 | 100 | 95 | 73 | 82 |
| 20857 | 100 (10) | 100 | 100 | 100 | 100 | 100 | 100 |
| Standard | 100 (20) | 98 | 95 | 95 | 93 | 82 | 82 |
| **Series 29** | | | | | | | |
| 20860 | 92 (20) | 62 | 73 | -- | -- | -- | -- |
| 20864 | 85 (12) | 23 | -- | -- | -- | -- | -- |
| 20865 | 88 (15) | 72 | 37 | -- | -- | -- | -- |
| 20868 | 98 (62) | 68 (13) | 95 | 55 | -- | -- | -- |
| 20869 | 100 (32) | 100 | 100 | 100 | 33 | -- | -- |

Table 2.--Continued

| ENT No. | Percent mortality on indicated days after treatment[1] | | | | | | |
|---|---|---|---|---|---|---|---|
| | Initial | 2-4 | 7-8 | 10-14 | 16-19 | 21-23 | 26-30 |
| Series 29 (contd.) | | | | | | | |
| 20870 | 100 (100) | 100 (37) | 100 (13) | 100 | 100 | 98 | 75 |
| 20871 | 98 (20) | 87 | 100 | 90 | 13 | -- | -- |
| 20872 | 100 (2) | 100 | 100 | 100 | 43 | -- | -- |
| 20873 | 100 (48) | 100 | 100 | 97 | 20 | -- | -- |
| 20874 | 100 (10) | 98 | 100 | 90 | 30 | -- | -- |
| 20875 | 100 (40) | 100 | 100 | 100 | 98 | 93 | 80 |
| Standard | 100 (8) | 100 | 100 | 100 | 100 | 85 | 80 |
| Series 30 | | | | | | | |
| 20891 | 100 (10) | 100 | 100 | 100 | 100 | 100 | 100 |
| 20893 | 100 (8) | 100 | 100 | 97 | 95 | 70 | 50 |
| 20894 | 98 (2) | 42 | -- | -- | -- | -- | -- |
| Standard | 100 (8) | 100 | 100 | 97 | 98 | 90 | 73 |
| Series 31 | | | | | | | |
| 20908 | 92 (0) | 97 | 98 | 97 | -- | 100 | 83 |
| 20911 | 100 (3) | 100 | 100 | 100 | -- | 100 | 100 |
| 20926 | 100 (32) | 100 | 100 | 58 | -- | -- | -- |
| 20927 | 100 (27) | 100 | 100 | 37 | -- | -- | -- |
| Standard | 97 (0) | 98 | 100 | 93 | -- | 90 | 95 |
| Series 32 | | | | | | | |
| 20933 | 100 (3) | 100 | 100 | 98 | -- | 100 | 100 |
| 20934 | 100 (0) | 100 | 100 | 100 | -- | 100 | 95 |
| 20947 | 93 (2) | 77 | 68 | 18 | -- | -- | -- |
| Standard | 100 (3) | 100 | 100 | 98 | -- | 95 | 98 |
| Series 33 | | | | | | | |
| 20962 | 100 (5) | 60 | 10 | -- | -- | -- | -- |
| 20963 | 100 (63) | 60 | -- | -- | -- | -- | -- |
| 20964 | 100 (2) | 95 | 90 | 95 | -- | 78 | 68 |
| Standard | 100 (2) | 95 | 95 | 85 | -- | 97 | 88 |
| Series 34 | | | | | | | |
| 20988 | 100 (18) | 100 | 100 | 100 | -- | 75 | 70 |
| 20989 | 100 (28) | 100 | 100 | 100 | -- | 100 | 100 |
| Standard | 100 (0) | 90 | 77 | 62 | -- | -- | -- |

Table 2.--Continued

| ENT No. | Percent mortality on indicated days after treatment[1] | | | | | | |
|---|---|---|---|---|---|---|---|
| | Initial | 2-4 | 7-8 | 10-14 | 16-19 | 21-23 | 26-30 |
| Series 35 | | | | | | | |
| 20996 | 95 (0) | 98 | 87 | 55 | -- | 73 | 57 |
| 20997 | 100 (3) | 100 | 95 | 8 | -- | -- | -- |
| 20999 | 100 (3) | 100 | 100 | 100 | -- | 100 | 100 |
| Standard | 100 (2) | 88 | 52 | 33 | -- | -- | -- |
| Series 36 | | | | | | | |
| 21011 | 100 (0) | 100 | 100 | 100 | -- | 88 | 98 |
| 21013 | 80 (0) | 30 | -- | -- | -- | -- | -- |
| 21019 | 100 (7) | 100 | 100 | 100 | -- | 100 | 100 |
| 21020 | 100 (5) | 100 | 100 | 100 | -- | 100 | 100 |
| Standard | 100 (10) | 88 | 82 | 37 | -- | -- | -- |
| Series 37 | | | | | | | |
| 21029 | 95 (2) | 95 | 68 | -- | -- | -- | -- |
| 21030 | 93 (2) | 83 | 62 | -- | -- | -- | -- |
| 21031 | 100 (5) | 98 | 80 | 37 | -- | -- | -- |
| 21032 | 97 (0) | 100 | 93 | 100 | -- | 45 | -- |
| 21033 | 88 (0) | 52 | 32 | -- | -- | -- | -- |
| 21034 | 100 (2) | 92 | 73 | 33 | -- | -- | -- |
| 21054 | 100 (68) | 100 (0) | 100 | 80 | -- | 13 | -- |
| 21055 | 100 (12) | 100 | 100 | 60 | -- | 17 | -- |
| 21056 | 87 (10) | 13 | -- | -- | -- | -- | -- |
| 21128 | 100 (33) | 100 (7) | 100 | 100 | -- | 95 | 63 |
| Standard | 100 (0) | 98 | 97 | 83 | -- | 12 | -- |
| Series 38 | | | | | | | |
| 21141 | 100 (0) | 93 | 90 | 97 | -- | 93 | 83 |
| 21172 | 100 (2) | 98 | 97 | 92 | -- | 88 | 88 |
| 21174 | 100 (0) | 98 | 52 | -- | -- | -- | -- |
| Standard | 100 (0) | 100 | 100 | 87 | -- | 83 | 77 |
| Series 39 | | | | | | | |
| 21195 | 99 (95) | 97 (98) | 97 (88) | 100 (90) | -- | 90 (72) | 77 |
| 21253 | 100 (3) | 100 | 100 | 100 | -- | 62 | -- |
| 21254 | 98 (15) | 100 | 100 | 100 | -- | 100 | 100 |
| 21255 | 100 (3) | 68 | -- | -- | -- | -- | -- |
| 21256 | 100 (7) | 97 | 92 | 63 | -- | -- | -- |
| 21257 | 98 (7) | 60 | -- | -- | -- | -- | -- |
| 21274 | 100 (3) | 77 | 73 | -- | -- | -- | -- |
| 21275 | 97 (32) | 85 | 72 | -- | -- | -- | -- |
| 21276 | 98 (15) | 80 | 77 | 37 | -- | -- | -- |
| Standard | 100 (5) | 100 | 97 | 92 | -- | 100 | 27 |

Table 2.--Continued

| ENT No. | Percent mortality on indicated days after treatment[1] | | | | | | |
|---|---|---|---|---|---|---|---|
| | Initial | 2-4 | 7-8 | 10-14 | 16-19 | 21-23 | 26-30 |
| Series 40 | | | | | | | |
| 21289 | 95 (8) | 27 | -- | -- | -- | -- | -- |
| 21290 | 92 (3) | 28 | -- | -- | -- | -- | -- |
| Standard | 100 | 100 | -- | -- | -- | -- | -- |
| Series 41 | | | | | | | |
| 21346 | 100 (2) | 100 | 100 | 100 | -- | 100 | 98 |
| 21353 | 100 (0) | 100 | 100 | 100 | -- | 100 | 100 |
| Standard | 100 | 100 | 100 | 88 | -- | 92 | 83 |
| Series 42 | | | | | | | |
| 21612 | 100 (3) | 55 | -- | -- | -- | -- | -- |
| Standard | 88 | 50 | -- | -- | -- | -- | -- |
| Series 43 | | | | | | | |
| 21632 | 100 (2) | 77 | 78 | 35 | -- | -- | -- |
| 21688 | 100 (0) | 23 | -- | -- | -- | -- | -- |
| 21689 | 97 (0) | 5 | -- | -- | -- | -- | -- |
| 21690 | 100 (0) | 32 | -- | -- | -- | -- | -- |
| 21699 | 100 (0) | 58 | -- | -- | -- | -- | -- |
| 21732 | 100 (0) | 100 | 100 | 97 | -- | 98 | 93 |
| Standard | 100 (0) | 83 | 57 | -- | -- | -- | -- |
| Series 44 | | | | | | | |
| 21755 | 80 (7) | 63 | -- | -- | -- | -- | -- |
| Standard | 87 | 70 | -- | -- | -- | -- | -- |
| Series 45 | | | | | | | |
| 21982 | 100 (3) | 100 | 98 | 100 | -- | 77 | 65 |
| Standard | 83 | 57 | -- | -- | -- | -- | -- |
| Series 46 | | | | | | | |
| 21999 | 100 (7) | -- | 100 | 100 | -- | 100 | 97 |
| Standard | 100 | -- | 100 | 92 | -- | 77 | 68 |
| Series 47 | | | | | | | |
| 30060 | 87 (15) | 55 | -- | -- | -- | -- | -- |
| 30061 | 95 (0) | 82 | 38 | -- | -- | -- | -- |
| 30100 | 100 (3) | 87 | 85 | 57 | -- | -- | -- |
| Standard | 100 | 100 | 98 | 98 | -- | -- | -- |

Table 2.--Continued

| ENT No. | Percent mortality on indicated days after treatment[1] | | | | | | |
|---|---|---|---|---|---|---|---|
| | Initial | 2-4 | 7-8 | 10-14 | 16-19 | 21-23 | 26-30 |
| Series 48 | | | | | | | |
| 30121 | 97 (3) | 97 | 95 | 95 | -- | 80 | 75 |
| 30122 | 100 (10) | 100 | 97 | 92 | -- | 95 | 98 |
| 30123 | 100 (8) | 100 | 100 | 95 | -- | 98 | 98 |
| Standard | 100 | 100 | 82 | 75 | -- | 70 | -- |
| Series 49 | | | | | | | |
| 30181 | 100 (3) | 82 | 55 | -- | -- | -- | -- |
| 30182 | 78 (0) | 80 | 73 | -- | -- | -- | -- |
| Standard | 93 | 95 | 95 | -- | -- | -- | -- |
| Series 50 | | | | | | | |
| 30210 | 100 (0) | 73 | 30 | -- | -- | -- | -- |
| 30289 | 100 (7) | 100 | 100 | 97 | -- | 63 | -- |
| 30290 | 100 (53) | 100 | 100 | 100 | -- | 98 | 88 |
| Standard | 97 | 100 | 97 | 92 | -- | 87 | 92 |
| Series 51 | | | | | | | |
| 21079 | 90 (8) | 37 | -- | -- | -- | -- | -- |
| 30336 | 100 (3) | 98 | 98 | 95 | -- | 100 | 95 |
| 30337 | 100 (7) | 100 | 100 | 92 | -- | 48 | -- |
| Standard | 97 | 97 | 80 | 82 | -- | 77 | 67 |
| Series 52 | | | | | | | |
| 30682 | 87 (0) | 58 | -- | -- | -- | -- | -- |
| 30684 | 88 (2) | 35 | -- | -- | -- | -- | -- |
| Standard | 93 | 87 | -- | -- | -- | -- | -- |
| Series 53 | | | | | | | |
| 30936 | 100 (8) | 100 | 47 | -- | -- | -- | -- |
| 30938 | 88 (2) | 43 | -- | -- | -- | -- | -- |
| 30998 | 97 (8) | 75 | 55 | -- | -- | -- | -- |
| 31000 | 100 (0) | 63 | -- | -- | -- | -- | -- |
| 31001 | 100 (3) | 72 | -- | -- | -- | -- | -- |
| 31005 | 100 (5) | 100 | 100 | 97 | -- | 72 | -- |
| Standard | 98 | 88 | 85 | 58 | -- | -- | -- |

Table 2.--Continued

| ENT No. | Percent mortality on indicated days after treatment[1] | | | | | | |
|---|---|---|---|---|---|---|---|
| | Initial | 2-4 | 7-8 | 10-14 | 16-19 | 21-23 | 26-30 |
| Series 54 | | | | | | | |
| 31026 | 100 (7) | 98 | 77 | 52 | -- | -- | -- |
| 31060 | 97 (2) | 98 | 95 | 80 | -- | 67 | -- |
| 31062 | 100 (23) | 100 | 98 | 87 | -- | 60 | -- |
| 31068 | 100 (2) | 100 | 98 | 100 | -- | 98 | 72 |
| 31072 | 90 (0) | 82 | 32 | -- | -- | -- | -- |
| 31073 | 100 (7) | 100 | 100 | 95 | -- | 97 | 95 |
| 31080 | 98 (3) | 100 | 100 | 100 | -- | 90 | 70 |
| 31083 | 100 (10) | 100 | 98 | 98 | -- | 95 | 78 |
| 31084 | 100 (3) | 95 | 100 | 97 | -- | 100 | 87 |
| 31113 | 100 (0) | 100 | 100 | 100 | -- | 100 | 98 |
| 31114 | 98 (3) | 97 | 100 | 93 | -- | 95 | 93 |
| Standard | 98 | 88 | 92 | 52 | -- | -- | -- |
| Series 55 | | | | | | | |
| 21219-a | 95 (2) | 98 | 98 | 95 | -- | 85 | 92 |
| 21279-a | 98 (5) | 98 | 98 | 95 | -- | 95 | 93 |
| 21280-a | 97 (0) | 98 | 97 | 95 | -- | 93 | 93 |
| 31218 | 80 (2) | 57 | -- | -- | -- | -- | -- |
| 31252 | 100 (18) | 22 | -- | -- | -- | -- | -- |
| 31255 | 98 (0) | 3 | -- | -- | -- | -- | -- |
| 31256 | 97 (22) | 20 | -- | -- | -- | -- | -- |
| 31257 | 98 (3) | 97 | 95 | 80 | -- | 78 | 87 |
| Standard | 95 | 97 | 93 | 88 | -- | 88 | 87 |
| Series 56 | | | | | | | |
| 31258 | 100 (5) | 53 | -- | -- | -- | -- | -- |
| 31259 | 100 (10) | 25 | -- | -- | -- | -- | -- |
| 31260 | 77 (2) | 83 | 75 | 77 | -- | 62 | -- |
| 31263 | 97 (23) | 95 | 95 | 85 | -- | 28 | -- |
| 31264 | 100 (2) | 95 | 88 | 88 | -- | 90 | 92 |
| 31265 | 98 (0) | 92 | 92 | 90 | -- | 83 | 90 |
| 31304 | 98 (83) | 97 | 95 | 97 | -- | 98 | 98 |
| 31305 | 97 (2) | 95 | 92 | 93 | -- | 95 | 92 |
| Standard | 93 | 92 | 90 | 85 | -- | 88 | 97 |
| Series 57 | | | | | | | |
| 25403 | 100 (3) | 73 | -- | -- | -- | -- | -- |
| 25404 | 100 (60) | 100 | (0) 92 | 65 | -- | -- | -- |
| 31319 | 92 (2) | 10 | -- | -- | -- | -- | -- |

Table 2.--Continued

| ENT No. | Percent mortality on indicated days after treatment[1] | | | | | | |
|---|---|---|---|---|---|---|---|
| | Initial | 2-4 | 7-8 | 10-14 | 16-19 | 21-23 | 26-30 |
| Series 57 (contd.) | | | | | | | |
| 31352 | 100 (2) | 93 | 93 | 93 | -- | 70 | -- |
| 31357 | 98 (2) | 27 | -- | -- | -- | -- | -- |
| 31363 | 95 (0) | 22 | -- | -- | -- | -- | -- |
| 31365 | 95 (7) | 90 | 88 | 88 | -- | 73 | 57 |
| 31367 | 100 (5) | 97 | 97 | 98 | -- | 88 | 90 |
| Standard | 97 | 90 | 65 | 80 | -- | 68 | 67 |
| Series 58 | | | | | | | |
| 31370 | 97 (0) | 93 | 88 | 82 | -- | 85 | 70 |
| 31376 | 97 (2) | 90 | 93 | 88 | -- | 83 | 78 |
| Standard | 95 | 85 | 55 | -- | -- | -- | -- |
| Series 59 | | | | | | | |
| 31383 | 100 (0) | 97 | 68 | -- | -- | -- | -- |
| 31390 | 95 (10) | 97 | 100 | 90 | -- | 90 | 77 |
| 31393 | 98 (5) | 88 | 85 | 72 | -- | -- | -- |
| Standard | 95 | 88 | 85 | 82 | -- | 80 | 72 |
| Series 60 | | | | | | | |
| 25456 | 100 (100) | 97 (92) | 65 (17) | -- | -- | -- | -- |
| 31426 | 98 (3) | 92 | 83 | 32 | -- | -- | -- |
| Standard | 97 | 88 | 97 | 85 | -- | -- | -- |
| Series 61 | | | | | | | |
| 19465 | 95 (73) | 43 | -- | -- | -- | -- | -- |
| 31478 | 98 (3) | 72 | -- | -- | -- | -- | -- |
| 31486 | 98 (2) | 97 | 97 | 95 | -- | 97 | 100 |
| 31501 | 100 (3) | 30 | -- | -- | -- | -- | -- |
| Standard | 98 | 88 | 88 | 82 | -- | 73 | 72 |
| Series 62 | | | | | | | |
| 31506 | 92 (52) | 100 | 85 | 97 | -- | 87 | 92 |
| Standard | 92 | 85 | 53 | -- | -- | -- | -- |

Table 2.--Continued

| ENT No. | Percent mortality on indicated days after treatment[1] | | | | | | |
|---|---|---|---|---|---|---|---|
| | Initial | 2-4 | 7-8 | 10-14 | 16-19 | 21-23 | 26-30 |
| Series 63 | | | | | | | |
| 31535 | 93 (5) | 93 | 88 | 80 | -- | 90 | 72 |
| 31539 | 97 (5) | 60 | -- | -- | -- | -- | -- |
| 31622 | 98 (5) | 50 | -- | -- | -- | -- | -- |
| 31626 | 90 (3) | 75 | 67 | -- | -- | -- | -- |
| Standard | 93 | 82 | 78 | 62 | -- | -- | -- |
| Series 64 | | | | | | | |
| 31630 | 90 (7) | 27 | -- | -- | -- | -- | -- |
| Standard | 85 | 78 | -- | -- | -- | -- | -- |
| Series 65 | | | | | | | |
| 31661 | 98 (0) | 95 | 97 | 95 | -- | 88 | 47 |
| 31665 | 90 (3) | 87 | 92 | 85 | -- | 92 | 98 |
| Standard | 87 | 70 | 62 | -- | -- | -- | -- |
| Series 66 | | | | | | | |
| 31917 | 98 (5) | 98 | 92 | 88 | -- | 62 | -- |
| Standard | 90 | 88 | 65 | -- | -- | -- | -- |

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[1] Figures in parentheses represent mortality caused by synergist alone.

Table 3.--Results of patch tests against body lice with selected synergists for pyrethrum. (Pyrethrins used at 0.1% in all series except the first when 0.2% was used. Series 1-10 not replicated, series 11 in triplicate.)

| ENT No. | Percent mortality in initial tests | Days effective at indicated mortality | | |
|---|---|---|---|---|
| | | 100% | 90% | 75% |
| Series 1 | | | | |
| 18323[1] | 100 | 12 | 27 | 27 |
| 20003[2] | 100 | 32 | 32 | 32 |
| 20110 | 100 | 12 | 12 | 12 |
| 20135 | 100 | 12 | 12 | 12 |
| 20136 | 100 | 12 | 12 | 40 |
| 20139 | 100 | 12 | 12 | 12 |
| 20142 | 100 | 1 | 12 | 12 |
| 20184 | 100 | 12 | 12 | 12 |
| Standard | 100 | 32 | 32 | 32 |
| Pyrethrum alone | 100 | 1 | 1 | 1 |
| Series 2 | | | | |
| 20003[2] | 100 | 15 | 27 | 27 |
| 20083 | 100 | 1 | 1 | 3 |
| 20084 | 100 | 1 | 3 | 6 |
| 20089 | 100 | 1 | 1 | 1 |
| 20091 | 100 | 15 | 15 | 15 |
| 20244 | 100 | 15 | 27 | 30 |
| 20272 | 100 | 15 | 15 | 15 |
| 20313 | 100 | 8 | 13 | 13 |
| Standard | 100 | 15 | 17 | 20 |
| Series 3 | | | | |
| 20090 | 100 | 3 | 7 | 7 |
| 20227 | 60 | 0 | 0 | 0 |
| 20246 | 100 | 1 | 3 | 3 |
| 20275 | 100 | 1 | 1 | 1 |
| 20292 | 100 | 1 | 1 | 1 |
| 20393 | 100 | 7 | 7 | 7 |
| 20411 | 100 | 1 | 10 | 10 |
| 20412 | 100 | 17 | 21 | 21 |
| 20413 | 100 | 21 | 21 | 21 |
| 20414 | 100 | 14 | 21 | 28 |
| 20416 | 100 | 3 | 7 | 7 |
| 20417 | 100 | 10 | 10 | 17 |
| Standard | 100 | 14 | 21 | 21 |
| Pyrethrum alone | 30 | 0 | 0 | 0 |

Table 3.--Continued

| ENT No. | Percent mortality in initial tests | Days effective at indicated mortality | | |
|---|---|---|---|---|
| | | 100% | 90% | 75% |
| Series 4 | | | | |
| 20429 | 100 | 6 | 13 | 16 |
| 20431 | 100 | 1 | 1 | 6 |
| 20432 | 100 | 1 | 1 | 6 |
| 20433 | 100 | 9 | 13 | 13 |
| 20436 | 100 | 1 | 9 | 13 |
| Standard | 100 | 16 | 16 | 16 |
| Pyrethrum alone | 50 | 0 | 0 | 0 |
| Series 5 | | | | |
| 20309 | 100 | 15 | 15 | 15 |
| 20332 | 100 | 12 | 12 | 12 |
| 20337 | 100 | 12 | 15 | 15 |
| 20338 | 100 | 8 | 8 | 8 |
| 20339 | 100 | 4 | 4 | 6 |
| 20357 | 100 | 8 | 8 | 12 |
| 20358 | 100 | 6 | 6 | 8 |
| 20386 | 100 | 6 | 6 | 6 |
| 20391 | 100 | 4 | 8 | 8 |
| 20392 | 90 | 1 | 8 | 8 |
| 20394 | 100 | 6 | 8 | 8 |
| 20395 | 100 | 4 | 6 | 6 |
| 20396 | 100 | 4 | 4 | 8 |
| Standard | 100 | 8 | 12 | 12 |
| Pyrethrum alone | 100 | 1 | 1 | 1 |
| Series 6 | | | | |
| 20461 | 100 | 7 | 14 | 21 |
| 20462 | 100 | 7 | 7 | 7 |
| 20463 | 100 | 7 | 7 | 7 |
| 20464 | 100 | 3 | 3 | 7 |
| 20465 | 100 | 7 | 7 | 7 |
| 20466 | 100 | 3 | 7 | 7 |
| Standard | 100 | 21 | 24 | 24 |
| Pyrethrum | 60 | 0 | 0 | 0 |

Table 3.--Continued

| ENT No. | Percent mortality in initial tests | Days effective at indicated mortality | | |
|---|---|---|---|---|
| | | 100% | 90% | 75% |
| Series 7 | | | | |
| 20425 | 100 | 21 | 21 | 21 |
| 20426 | 100 | 14 | 14 | 21 |
| 20482 | 100 | 3 | 3 | 3 |
| 20483 | 100 | 3 | 7 | 7 |
| 20484 | 100 | 10 | 14 | 21 |
| 20485 | 100 | 3 | 3 | 3 |
| 20516 | 100 | 14 | 14 | 14 |
| 20561 | 100 | 7 | 10 | 14 |
| 20572 | 100 | 10 | 10 | 10 |
| 20589 | 100 | 14 | 14 | 21 |
| 20590 | 100 | 17 | 21 | 21 |
| Standard | 100 | 14 | 21 | 21 |
| Pyrethrum alone | 75 | 0 | 0 | 1 |
| Series 8 | | | | |
| 20613 | 100 | 1 | 7 | 7 |
| 20616 | 100 | 14 | 14 | 17 |
| Standard | 100 | 16-17 | 16-17 | 16-17 |
| Pyrethrum | 70 | 0 | 0 | 0 |
| Series 9 | | | | |
| 20643 | 100 | 3 | 7 | 7 |
| 20644 | 100 | 3 | 3 | 3 |
| 20660 | 100 | 7 | 7 | 7 |
| 20687 | 100 | 3 | 7 | 14 |
| 20691 | 100 | 3 | 3 | 3 |
| Standard | 100 | 16-17 | 16-17 | 16-17 |
| Pyrethrum alone | 30 | 0 | 0 | 0 |
| Series 10 | | | | |
| 20702 | 100 | 1 | 1 | 3 |
| 20709 | 55 | 0 | 0 | 0 |
| 20710 | 100 | 1 | 1 | 1 |
| 20717 | 100 | 1 | 1 | 1 |
| 20718 | 100 | 1 | 1 | 1 |
| 20720 | 100 | 1 | 1 | 1 |
| 20736 | 100 | 1 | 1 | 1 |
| Standard | 100 | 7 | 7 | 7 |
| Pyrethrum alone | 5 | 0 | 0 | 0 |

Table 3.--Continued

| ENT No. | Percent mortality in initial tests | Days effective at indicated mortality | | |
|---|---|---|---|---|
| | | 100% | 90% | 75% |
| Series 11 | | | | |
| 20856 | 100 | 7 | 14 | 14 |
| 20857 | 100 | 35 | 43 | 43 |
| 20870 | 100 | 7 | 7 | 14 |
| 20875 | 100 | 14 | 21 | 35 |
| 20891 | 100 | 70 | 91 | 91 |
| 20893 | 100 | 14 | 14 | 21 |
| Standard | 100 | 70 | 91 | 91 |
| Pyrethrum alone | 68 | 0 | 0 | 0 |

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1/ This compound, Benzene, 1,2-methylenedioxy-4-[2-(octylsulfonyl)-propyl]- was ineffective in beaker tests with pyrethrum.

2/ Tested in more than one series.

Table 4.--Results of patch tests against body lice with selected synergists for allethrin. (Allethrin used at 0.1% in all series except the first when 0.2% was used. Series 1-2 not replicated, series 3-13 in triplicate.)

| ENT No. | Percent mortality in initial tests[1] | Days effective at indicated mortality | | |
|---|---|---|---|---|
| | | 100% | 90% | 75% |
| Series 1 | | | | |
| 20332 | 100 | 1 | 4 | 4 |
| 20337 | 100 | 7 | 11 | 11 |
| 20411 | 100 | 1 | 4 | 4 |
| 20416 | 100 | 1 | 1 | 4 |
| 20461 | 100 | 1 | 1 | 4 |
| 20572 | 100 | 4 | 7 | 7 |
| Standard | 100 | 7 | 11 | 11 |
| Allethrin alone | 0 | 0 | 0 | 0 |
| Series 2 | | | | |
| 20643 | 100 | 7 | 7 | 7 |
| 20644 | 100 (5) | 1 | 1 | 1 |
| 20687 | 100 | 7 | 7 | 10 |
| 20691 | 100 | 1 | 1 | 1 |
| 20702 | 100 (15) | 1 | 7 | 7 |
| 20717 | 100 (55) | 7 | 7 | 7 |
| 20718 | 100 | 7 | 7 | 7 |
| 20736 | 100 (15) | 7 | 7 | 7 |
| Standard | 100 | 7 | 14 | 14 |
| Allethrin alone | 0 | 0 | 0 | 0 |
| Series 3 | | | | |
| 20856 | 100 (0) | 1 | 3 | 7 |
| 20857 | 100 (2) | 28 | 28 | 28 |
| 20872 | 18 (0) | 0 | 0 | 0 |
| Standard | 100 (5) | 42 | 42 | 42 |
| Allethrin alone | 5 | 0 | 0 | 0 |
| Series 4 | | | | |
| 20516 | 100 | 21 | 56 | 56 |
| 20614 | 100 | 14 | 28 | 42 |
| 20615 | 100 | 21 | 42 | 42 |
| 20873 | 100 | 1 | 1 | 1 |
| 20875 | 100 | 14 | 14 | 28 |
| 20891 | 100 | 42 | 42 | 42 |
| 20893 | 100 | 7 | 7 | 7 |
| 20908 | 100 | 21 | 28 | 42 |

Table 4.--Continued

| ENT No. | Percent mortality in initial tests1/ | Days effective at indicated mortality | | |
|---|---|---|---|---|
| | | 100% | 90% | 75% |
| Series 4 (contd.) | | | | |
| 20911 | 100 | 28 | 56 | 56 |
| 20926 | 100 | 1 | 3 | 7 |
| 20927 | 100 | 3 | 3 | 7 |
| 20933 | 100 | 1 | 7 | 7 |
| 20934 | 100 | 14 | 21 | 28 |
| 20962 | 100 | 1 | 1 | 1 |
| 20964 | 100 | 28 | 42 | 56 |
| 20988 | 100 | 7 | 7 | 7 |
| Standard | 100 | 56 | 91 | 91 |
| Allethrin alone | 55 | 0 | 0 | 0 |
| Series 5 | | | | |
| 20989 | 100 | 14 | 28 | 28 |
| 20996 | 100 | 14 | 28 | 42 |
| 20997 | 100 | 28 | 28 | 42 |
| 21011 | 100 | 21 | 28 | 42 |
| 21019 | 100 | 56 | 91 | 91 |
| 21020 | 100 | 42 | 91 | 91 |
| 21029 | 100 | 28 | 42 | 56 |
| 21030 | 100 | 3 | 14 | 21 |
| 21031 | 100 | 3 | 3 | 14 |
| 21032 | 100 | 42 | 56 | 56 |
| 21034 | 100 | 3 | 7 | 7 |
| 21054 | 100 | 3 | 7 | 7 |
| 21055 | 100 | 3 | 3 | 7 |
| 21128 | 100 | 1 | 1 | 3 |
| Standard | 100 | 56 | 56 | 56 |
| Allethrin alone | 48 | 0 | 0 | 0 |
| Series 6 | | | | |
| 20999 | 100 | 42 | 57 | 57 |
| 21172 | 100 | 42 | 42 | 42 |
| 21174 | 100 | 7 | 28 | 28 |
| 21253 | 100 | 1 | 7 | 14 |
| 21254 | 100 | 7 | 7 | 21 |
| 21255 | 100 | 1 | 1 | 7 |
| 21256 | 100 | 1 | 7 | 7 |
| 21275 | 100 | 1 | 7 | 7 |

Table 4.--Continued

| ENT No. | Percent mortality in initial tests[1] | Days effective at indicated mortality | | |
|---|---|---|---|---|
| | | 100% | 90% | 75% |
| Series 6 (contd.) | | | | |
| 21276 | 100 | 1 | 7 | 7 |
| 21346 | 100 | 7 | 21 | 28 |
| 21353 | 100 | 1 | 7 | 21 |
| 21824[2] | 100 | 21 | 57 | 57 |
| Standard | 100 | 57 | 57 | 57 |
| Allethrin alone | 72 | 0 | 0 | 0 |
| Series 7 | | | | |
| 21612 | 100 | 7 | 14 | 14 |
| 21732 | 100 | 7 | 14 | 28 |
| 21755 | 100 | 7 | 14 | 21 |
| 21982 | 100 | 1 | 14 | 21 |
| 21999 | 100 | 14 | 14 | 21 |
| 30100 | 100 | 7 | 7 | 7 |
| 30121 | 100 | 1 | 7 | 7 |
| 30122 | 100 | 21 | 21 | 21 |
| 30123 | 100 | 21 | 28 | 42 |
| Standard | 100 | 28 | 56 | 56 |
| Series 8 | | | | |
| 30289 | 100 | 1 | 7 | 14 |
| 30290 | 100 | 1 | 7 | 7 |
| 30337 | 100 | 1 | 1 | 1 |
| Standard | 100 | 1 | 7 | 21 |
| Allethrin alone | 65 | 0 | 0 | 0 |
| Series 9 | | | | |
| 30336 | 100 | 28 | 28 | 42 |
| 30936 | 100 | 1 | 1 | 7 |
| 30998 | 100 | 1 | 1 | 13 |
| 31000 | 100 | 1 | 1 | 1 |
| 31001 | 100 | 1 | 1 | 1 |
| 31005 | 100 | 1 | 7 | 21 |
| 31026 | 95 | 0 | 7 | 13 |
| 31060 | 100 | 1 | 13 | 28 |
| 31062 | 100 | 7 | 7 | 13 |
| 31068 | 100 | 7 | 13 | 21 |
| 31073 | 100 | 28 | 28 | 42 |

Table 4.--Continued

| ENT No. | Percent mortality in initial tests1/ | Days effective at indicated mortality | | |
|---|---|---|---|---|
| | | 100% | 90% | 75% |
| Series 9 (contd.) | | | | |
| 31080 | 100 | 1 | 1 | 7 |
| 31083 | 100 | 1 | 7 | 13 |
| 31084 | 100 | 1 | 7 | 7 |
| 31113 | 100 | 28 | 28 | 28 |
| 31114 | 100 | 1 | 7 | 21 |
| Standard | 100 | 42 | 42 | 56 |
| Allethrin alone | 53 | 0 | 0 | 0 |
| Series 10 | | | | |
| 21219-a | 98 | 0 | 14 | 14 |
| 21279-a | 97 | 0 | 14 | 21 |
| 21280-a | 98 | 0 | 28 | 28 |
| 25402 | 98 | 0 | 1 | 1 |
| 25403 | 98 | 0 | 1 | 1 |
| 25404 | 100 | 1 | 1 | 1 |
| 31218 | 97 | 0 | 1 | 1 |
| 31252 | 98 | 0 | 1 | 1 |
| 31256 | 100 | 1 | 1 | 1 |
| 31257 | 97 | 0 | 7 | 7 |
| 31258 | 97 | 0 | 1 | 1 |
| 31259 | 98 | 0 | 1 | 1 |
| Standard | 97 | 7 | 28 | 42 |
| Series 11 | | | | |
| 31263 | 100 | 7 | 28 | 28 |
| 31264 | 100 | 42 | 42 | 42 |
| 31265 | 100 | 14 | 42 | 42 |
| 31304 | 98 | 7 | 42 | 42 |
| 31305 | 100 | 1 | 14 | 28 |
| 31319 | 100 | 1 | 1 | 1 |
| 31320 | 100 | 1 | 14 | 14 |
| 31352 | 100 | 7 | 21 | 28 |
| 31357 | 100 | 1 | 1 | 1 |
| 31363 | 100 | 1 | 1 | 1 |
| 31367 | 100 | 21 | 28 | 28 |
| Standard | 100 | 42 | 42 | 90 |

Table 4.--Continued

| ENT No. | Percent mortality in initial tests[1] | Days effective at indicated mortality | | |
|---|---|---|---|---|
| | | 100% | 90% | 75% |
| Series 12 | | | | |
| 25456 | 100 | 1 | 1 | 1 |
| 31370 | 100 | 1 | 14 | 14 |
| 31376 | 100 | 14 | 28 | 28 |
| 31383 | 100 | 1 | 1 | 1 |
| 31390 | 100 | 1 | 7 | 14 |
| 31393 | 100 | 1 | 1 | 7 |
| 31403 | 100 | 14 | 21 | 28 |
| 31486 | 100 | 1 | 14 | 21 |
| Standard | 100 | 28 | 42 | 42 |
| Series 13 | | | | |
| 31506 | 100 | 1 | 28 | 91 |
| 31535 | 100 | 1 | 56 | 56 |
| 31539 | 100 | 1 | 21 | 21 |
| 31622 | 100 | 1 | 1 | 1 |
| 31626 | 88 | 0 | 0 | 1 |
| 31630 | 100 | 1 | 1 | 1 |
| 31661 | 100 | 1 | 7 | 21 |
| 31664 | 98 | 0 | 1 | 1 |
| 31665 | 100 | 21 | 56 | 56 |
| Standard | 100 | 1 | 91 | 91 |

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1/ Figures in parentheses represent mortality caused by synergist alone.

2/ This compound, Tropic acid, 3-(3,4-methylenedioxyphenyl)-, methyl ester, acetate, was ineffective in beaker tests with pyrethrum.

Table 5.--Results of sleeve tests against body lice with selected synergists for pyrethrum. (0.2% of pyrethrins in series 1 and 9-12, 0.1% in series 2-8. Series 1-6 in duplicate, series 7-12 in quadruplicate.)

| ENT No. | Percent mortality in initial tests | Days effective at indicated mortality | | |
|---|---|---|---|---|
| | | 100% | 90% | 75% |
| Series 1 | | | | |
| 18323[1] | 100 | 13 | 17 | 17 |
| 20110 | 100 | 3 | 6 | 6 |
| 20135 | 100 | 3 | 6 | 6 |
| 20136[2] | 100 | 3 | 10 | 13 |
| 20139[2] | 100 | 3 | 6 | 10 |
| 20142 | 100 | 3 | 3 | 6 |
| 20184[2] | 100 | 3 | 6 | 6 |
| Standard | 100 | 13 | 17 | 17 |
| Series 2 | | | | |
| 20065 | 48 | 0 | 0 | 0 |
| 20083 | 60 | 0 | 0 | 0 |
| 20084 | 100 | 3 | 3 | 3 |
| 20091 | 100 | 3 | 10 | 10 |
| 20227 | 34 | 0 | 0 | 0 |
| 20246 | 98 | 0 | 3 | 3 |
| 20272 | 98 | 0 | 3 | 6-7 |
| Standard | 100 | 3 | 10 | 10 |
| Series 3 | | | | |
| 20309 | 100 | 6-7 | 10 | 13-14 |
| 20313 | 98 | 0 | 3 | 3 |
| 20332 | 100 | 3 | 6-7 | 6-7 |
| 20337 | 100 | 10 | 10 | 13-14 |
| 20392 | 100 | 3 | 3 | 6-7 |
| 20394 | 78 | 0 | 0 | 3 |
| 20411 | 100 | 3 | 6-7 | 6-7 |
| Standard | 100 | 6-7 | 6-7 | 10 |
| Series 4 | | | | |
| 20090 | 92 | 0 | 3 | 3 |
| 20136[2] | 100 | 3 | 6-7 | 6-7 |
| 20139[2] | 100 | 3 | 3 | 6-7 |
| 20184[2] | 100 | 3 | 6-7 | 6-7 |
| 20275 | 80 | 0 | 0 | 3 |
| 20292 | 64 | 0 | 0 | 0 |
| 20357[2] | 100 | 3 | 3 | 3 |
| Standard | 100 | 6-7 | 10 | 10 |

Table 5.--Continued

| ENT No. | Percent mortality in initial tests | Days effective at indicated mortality | | |
|---|---|---|---|---|
| | | 100% | 90% | 75% |
| Series 5 | | | | |
| 20358 | 78 | 0 | 0 | 3 |
| 20393 | 98 | 0 | 3 | 3 |
| 20412 | 100 | 3 | 10 | 13-14 |
| 20413 | 100 | 6-7 | 6-7 | 13-14 |
| 20414 | 100 | 6-7 | 10 | 13-14 |
| 20416 | 98 | 0 | 3 | 3 |
| 20417[2] | 98 | 0 | 6-7 | 6-7 |
| Standard | 100 | 6-7 | 13-14 | 13-14 |
| Series 6 | | | | |
| 20357[2] | 100 | 3 | 3 | 6-7 |
| 20417[2] | 100 | 3 | 3 | 6-7 |
| 20429 | 100 | 3 | 3 | 3 |
| 20431 | 66 | 0 | 0 | 0 |
| 20432 | 94 | 0 | 3 | 6-7 |
| 20433 | 84 | 0 | 0 | 3 |
| 20436 | 100 | 3 | 6-7 | 6-7 |
| Standard | 100 | 6-7 | 6-7 | 6-7 |
| Series 7 | | | | |
| 20425 | 100 | 3 | 7 | 10 |
| 20426 | 100 | 7 | 7 | 10 |
| 20461 | 100 | 3 | 7 | 7 |
| Standard | 100 | 7 | 10 | 14 |
| Series 8 | | | | |
| 20244[2] | 100 | 7 | 10 | 14 |
| 20484 | 100 | 3 | 7 | 10 |
| 20589 | 100 | 10 | 10 | 14 |
| Standard | 100 | 7 | 10 | 14 |
| Series 9 | | | | |
| 20244[2] | 100 | 10 | 24 | 24 |
| 20482 | 100 | 3 | 7 | 7 |
| 20483 | 100 | 7 | 10 | 10 |
| Standard | 100 | 14 | 24 | 24 |

Table 5.--Continued

| ENT No. | Percent mortality in initial tests | Days effective at indicated mortality | | |
|---|---|---|---|---|
| | | 100% | 90% | 75% |
| Series 10 | | | | |
| 20561 | 100 | 13 | 24 | 24 |
| 20572 | 100 | 13 | 24 | 24 |
| 20590 | 100 | 13 | 17 | 24 |
| Standard | 100 | 17 | 24 | 24 |
| Series 11 | | | | |
| 20613 | 100 | 3 | 6 | 6 |
| 20616 | 100 | 3 | 10 | 13 |
| 20687 | 100 | 6 | 17 | 20 |
| Standard | 100 | 17 | 24 | 24 |
| Series 12 | | | | |
| 20857 | 100 | 6 | 10 | 20 |
| 20875 | 100 | 6 | 10 | 13 |
| 20891 | 100 | 13 | 20 | 24 |
| Standard | 100 | 10 | 17 | 24 |

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1/ This compound, Benzene, 1,2-methylenedioxy-4-[2-(octylsulfonyl)-propyl]- was ineffective in beaker tests with pyrethrum.

2/ Tested in more than one series.

Table 6.--Results of sleeve tests against body lice with selected synergists for allethrin. (0.2% of allethrin in series 1 and 5-8 and 0.1% in series 2-4. Series 1-5 in duplicate, series 6-10 in quadruplicate.)

| ENT No. | Percent mortality in initial tests | Days effective at indicated mortality | | |
|---|---|---|---|---|
| | | 100% | 90% | 75% |
| Series 1 | | | | |
| 18323[1,2] | 100 | 6 | 6 | 6 |
| 20110 | 98 | 0 | 3 | 3 |
| 20135 | 100 | 3 | 3 | 6 |
| 20136 | 96 | 0 | 3 | 3 |
| 20139 | 100 | 3 | 3 | 3 |
| 20142 | 82 | 0 | 0 | 3 |
| 20184 | 100 | 3 | 3 | 6 |
| Standard | 100 | 3 | 6 | 6 |
| Series 2 | | | | |
| 20091[2] | 100 | 3 | 7 | 10 |
| 20244[2] | 100 | 3 | 7 | 7 |
| 20272[2] | 100 | 3 | 7 | 7 |
| 20309[2] | 100 | 7 | 7 | 10 |
| 20412 | 100 | 3 | 3 | 3 |
| 20413 | 100 | 3 | 7 | 10 |
| 20414 | 100 | 3 | 7 | 7 |
| Standard | 100 | 3 | 7 | 10 |
| Series 3 | | | | |
| 18323[2] | 100 | 3 | 3 | 7 |
| 20003 | 94 | 0 | 7 | 7 |
| 20332[2] | 100 | 3 | 10 | 10 |
| 20337[2] | 100 | 3 | 7 | 10 |
| 20429 | 98 | 0 | 7 | 10 |
| 20484[2] | 100 | 3 | 7 | 7 |
| Standard | 98 | 0 | 3 | 7 |
| Series 4 | | | | |
| 20309[2] | 97 | 0 | 4 | 8 |
| 20332[2] | 99 | 0 | 4 | 8 |
| 20337[2] | 98 | 0 | 4 | 4 |
| Standard | 98 | 0 | 4 | 8 |

Table 6.--Continued

| ENT No. | Percent mortality in initial tests | Days effective at indicated mortality | | |
|---|---|---|---|---|
| | | 100% | 90% | 75% |
| Series 5 | | | | |
| 20091[2/] | 100 | 3 | 17 | 17 |
| 20244[2/] | 100 | 7 | 14 | 17 |
| 20272[2/] | 100 | 3 | 14 | 14 |
| 20309[2/] | 100 | 7 | 14 | 17 |
| 20332[2/] | 100 | 7 | 7 | 10 |
| 20337[2/] | 100 | 7 | 14 | 14 |
| 20484[2/] | 100 | 3 | 7 | 10 |
| Standard | 100 | 10 | 14 | 17 |
| Series 6 | | | | |
| 20425 | 100 | 3 | 6-8 | 6-8 |
| 20426 | 96 | 0 | 3 | 6-8 |
| 20436 | 100 | 3 | 6-8 | 10 |
| Standard | 100 | 6-8 | 13-14 | 13-14 |
| Series 7 | | | | |
| 20615 | 99 | 0 | 10 | 13-14 |
| 21019 | 100 | 6-8 | 10 | 10 |
| 21032 | 100 | 3 | 6-8 | 6-8 |
| Standard | 100 | 3 | 10 | 13-14 |
| Series 8 | | | | |
| 20857 | 100 | 3 | 3 | 7 |
| 20875 | 99 | 0 | 3 | 3 |
| 20891 | 100 | 3 | 10 | 10 |
| Standard | 100 | 3 | 10 | 10 |
| Series 9 | | | | |
| 30336 | 100 | 3 | 3 | 10 |
| 31073 | 98 | 0 | 3 | 10 |
| 31113 | 100 | 3 | 3 | 10 |
| Standard | 100 | 3 | 10 | 13-15 |

Table 6.--Continued

| ENT No. | Percent mortality in initial tests | Days effective at indicated mortality | | |
|---|---|---|---|---|
| | | 100% | 90% | 75% |
| Series 10 | | | | |
| 31263 | 97 | 0 | 3 | 3 |
| 31264 | 100 | 3 | 3 | 10 |
| 31265 | 99 | 0 | 7 | 10 |
| Standard | 99 | 0 | 10 | 13-15 |

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[1] This compound, Benzene, 1,2-methylenedioxy-4-[2-(octylsulfonyl)-propyl]- was ineffective in beaker tests with pyrethrum.

[2] Tested in more than one series.